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THE ETIOLOGY OF ECZEMA.*

JAMES STEVENSON, M.D.
TULSA, OKLA.

No apology is offered in bringing this ancient theme before you for discussion. A condition which occupies one-third of the dermatologist's time, and one concerning which our knowledge is still far from complete, is deserving of frequent consideration. An apology is offered, however, for the incomplete manner in which such a large subject must be presented in a limited time.

It is not the purpose of this paper to draw any distinction between Dermatitis and Eczema. As the lesion of the two are indistinguishable, clinically, and histologically, they will here be considered as one and the same.

Eczema is not a disease entity. It is a symptom, a cutaneous reaction to irritants, external, internal, or both. It appears from clinical observation that the skin of Eczema patients is abnormally sensitive, and as Bloch and others have shown this is true of the uninvolved skin as well as of the involved portion. For many years the high-sounding phrase "diathesis", meaning nothing, sufficed as an explanation of this cutaneous phenomenon. Some glimmering of light has recently been shed on this problem. The experimental work of Luithlen¹ and of Klauder and Brown² indicates one of the factors involved; abnormal metabolism of the inorganic salts, particularly of the salts of calcium. Certainly this is not the only factor involved, for it has also been shown that narcosis, artificially produced nephritis and hepatitis, injections of gelatin and of human serum also alter the sensitiveness of the skin to externally applied irritants. The work just cited is possibly of great practical importance, in that calcium salt or parathyroid gland

therapy may prove of service in lessening the vulnerability of the eczema-susceptible skin.

Schamberg and Brown³ found in 44 per cent of a series of cases an increased blood uric acid content, thus lending some color to the old "diathesis" theory. This result has not been confirmed by the later investigations of Michael.

It has long been known, clinically, that a certain proportion of eczema cases, are benefited by a curtailment of the carbohydrate intake. McGlasson⁴, Haldin Davis and Ayers⁵, have made blood sugar determinations and in the case of Ayers glucose tolerance tests as well, in a large number of eczema patients, finding a dysfunction of carbohydrate metabolism in a substantial number of instances. The cause of this, in the light of our present knowledge, can be only a subject of speculation. Does it indicate a pre-diabetic state, or an endocrine derangement involving the thyroid and pituitary, or a deficient liver function?

The occasional association of eczema with such allergic conditions as urticaria, hay fever and asthma is a matter of common knowledge. The allergic character of certain eczemas was first emphasized by Blackfan in 1916. Engman and Wander⁶ in a large number of cases found positive protein sensitization tests in 78 per cent of infantile eczema patients, and in 38 per cent of adult patients with chronic generalized eczema. The work of Strickler on Ivy poisoning and of Bivings on poison oak poisoning proves that these causes of the disease are also allergic in nature. Many other substances, non-protein in nature produce eczematoid eruptions in a manner strongly suggestive of allergy.

The importance and value of protein sensitization tests in eczema of obscure etiology cannot be overemphasized. In a number of patients whose disease I suspected was due to external irritants I have tested the suspected irritant by placing a little of the offending material on the flex-

*Read before the Section on Genito-Urinary, Dermatology and Radiology, Annual Meeting, Oklahoma State Medical Association, Oklahoma City, June 22, 23, 24, 1926.

or surface of the forearm, covered it with gauze dressing for twenty-four to forty-eight hours, and observed the result. I wish to cite two cases to illustrate the point.

Case 1. Mrs. J. R., aged 48, a white American, teaching typewriting in a business college, first presented herself in the summer of 1925, with a disturbance of two weeks duration. It was the conventional picture of erythematous-vesicular, weeping dermatitis, localized to the fingers. A number of likely irritants were ruled out; a painted whistle she used in her work, the carbon from typewriter ribbons, a nail polish, etc. As a matter of fact we did not solve the mystery, for in two weeks the eruption disappeared spontaneously. In May, 1926, Mrs. R. returned with a recurrence of her disease and stated her belief that the eruption was due to stemming strawberries. Portions of crushed strawberry were applied to the unbroken skin of the forearm, and covered with a gauze dressing. In twenty-four hours there was a zone of erythema at the site of application, which subsequently vesiculated. The patient allowed her husband to stem the fruit thereafter and her eruption promptly disappeared.

Case 2. Mrs. O. A. aged 28, an American housewife, first presented herself Feb. 23, 1926, with a disturbance of a years duration. There was an itching eruption limited to the face and neck, of an erythematous and scaly nature, for which she had been variously treated without relief. Inquiry about cosmetics used revealed that the patient had commenced the use of a certain powder a few days before the onset of the dermatitis. This seemed a clue, and the face powder was applied to the unbroken skin of the forearm, and covered with a dressing. Twenty-four hours later a broad zone of erythema was present at the site of application. After discontinuing the use of the offending cosmetic, the eruption disappeared.

These two cases illustrate also the gist of this essay; that, with the exception of allergy, the probability exists that all the factors heretofore considered—the metabolic disturbances, the endocrine derangements, are rather predisposing than exciting causes of eczema. Taking the work of Schamberg and Brown, for instance, one would imagine that in the nephritic ward of a hospital, one would find numerous examples of eczema. As a matter of fact the reverse is true. In a majority of

eczema patients, if diligent search is made, an external irritant can be found, which, when removed, abruptly terminates the disease. I have seen a number of infantile eczema patients, who have been deprived of fats or of carbohydrates without improving the dermatitis, clear up promptly with the use of Whites' crude coal tar ointment. Surely this cannot mean that the metabolic disturbance is the factor of paramount importance.

The possible external irritants which can produce eczema are so numerous that they can be no more than outlined here. Physical causes embrace mechanical irritation such as that produced by the pressure of rubbing of clothing, scratching etc. Under this head also may be placed extremes of heat or cold, and the action of the sun's rays. Chemical causes include all the numerous substances used in modern industry. The list is given in detail in the monograph of R. Prosser Whites. The eczema of dishwashers produced by soap and water, and of dye-workers are familiar examples. The universal craving for that "school-girl complexion" has resulted in many cases of dermatitis due to face powders, rouge, hair dyes, massage creams and the like. The vegetable poisons, from a large number of plants are also frequently responsible.

A number of parasites, or their excretions, or toxins, commonly cause eczematoid eruptions. The best known is the eruption so often found on the palms and soles, due to infection with the epidermophyton. Indeed so common is this affection in Oklahoma, that diligent search with the microscope should be made for fungi in every eczematoid eruption occurring about the hands, feet, groins, or anus.

Solving the question of the etiology in a given case of eczema means that the dermatologist must be not only a good internist, but must know when not to be an internist. It is absurd to perform elaborate blood chemistry and basal metabolism studies on a patient whose eczema clears up promptly upon the removal of an offending primrose plant. In a given case, the physician does best, perhaps, who considers the entire environment of the patient and strives first to find an external irritant which may be producing the dermatitis. He will be successful in a large majority of cases. He will not be prescribing carbohydrate-free diets for patients who only need Whitfields ointment to cure an epidermophytosis.

In conclusion I offer a short working guide which summarizes the statements made above.

EXCITING CAUSES

- a. Physical causes.
- b. Chemical irritants.
- c. Parasites.
- d. Anaphylaxis.

PREDISPOSING CAUSES

- a. Metabolic disorders.
- b. Endocrine disturbances.
- c. Diseases causing inanition-focal infections.

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CLINICAL USE OF EPHEDRIN IN THE TREATMENT OF ASTHMA AND HAY-FEVER.*

RAY M. BALLYEAT, A.M., M.D.
OKLAHOMA CITY.

After a fairly extensive use of ephedrin in the treatment of asthma and hay-fever over a period of nearly a year, I am convinced that this drug is the most important addition to the armamentarium for the treatment of these diseases that has been given us since the discovery of epinephrine. I trust that the data given in this paper will be helpful in interesting others and instructing them in its use in the control of these two distressing syndromes.

Ephedrin is an alka'oid isolated from a plant, Ma Huang (*Ephedra vulgaris* var, *helvatica* and family, Gnetaceæ) which grows profusely in several provinces of China and has been used by the Chinese as a medicine since about 3000 years B. C. They have used the drug as a sedative for coughs and as a circulatory stimulant. For many years it has also been used by them empirically for the relief of asthmatic attacks, however, the determination of the exact physiological actions was not known until K. K. Chen¹, a native of China, while working in the Pekin Union Medical College, learned from a native druggist, one

of his relatives, that Ma Huang, a constituent of so many Chinese prescriptions, might have very important actions. This was in 1923-24 and during that year while he was doing experimental work on lower animals with it and looking up the literature, he found that G. Yamanashi, a Japanese, in 1885, had isolated the active principal of the shrub and had given it the name "ephedrin", and that some of the physiological properties of the drug had already been determined by this Japanese and later by Nagai. This work antedated the isolation of epinephrine, and it is most interesting to note that the action of the two drugs both chemically and physiologically is so similar, and that the names of the two differ but little.

Due to domestic difficulties in China, the production of ephedrin has been greatly checked, making the supply in this country very much limited, but we have every reason to believe that in a few months conditions will be such that the supply in the United States will be adequate.



FIG. NO. 1—MA HUANG (*EPHEDRA VULGARIS* VAR., *HELVITICA*)

PHYSIOLOGICAL ACTION

The physiological actions of ephedrin are probably entirely due to its stimulation of the vegetative nervous system. Some investigators have tried to show that it has a direct action on the smooth muscle it-

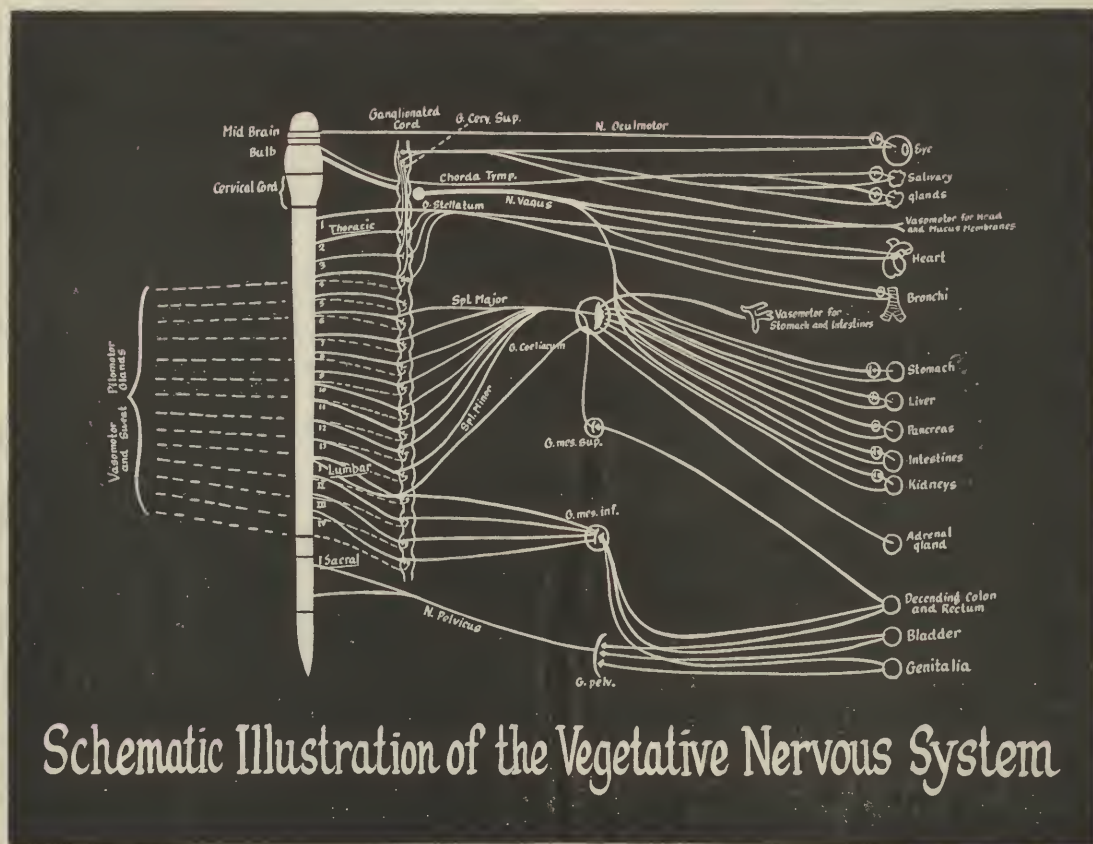
*Read before St. Anthony's Clinical Society, December 12, 1926.

self, but this has not been definitely determined thus far.

Physiologists and neurologists have shown that the sympathetic fibers of the vegetative nervous system are the inhibitors and that the parasympathetic fibers are the activators of the bronchial tree, and likewise a large portion of the intestinal tract, but that this action is just reversed in the sacral and rectal region. In

wall to some extent destroys the desire to urinate.

It has been shown by Chen and later by Brown that when ephedrin is given intravenously it elevates blood pressure, both in lower animals and in man, and that the action is much more prolonged than that of epinephrine. When applied locally to the eye it will produce mydriasis, but it has no detrimental effects to the tissue of the



Schematic Illustration of the Vegetative Nervous System

FIG. NO. 2—SCHEMATIC ILLUSTRATION OF THE VEGETATIVE NERVOUS SYSTEM

several cases in which I have given ephedrin daily over a long period of time, several patients have observed that they have little desire to pass urine and some difficulty in relaxing the sphincter ani. This can be explained physiologically since ephedrin stimulates the sympathetic fibers, opposing the parasympathetic thereby giving relaxation to the bronchial tree. Yet at the same time it stimulates the sympathetic fibers of the vesical sphincter, and in that region the sympathetic fiber is the activator, thus causing a spasm of the sphincter. The sympathetic fiber is the inhibitor to the muscle of the bladder wall. The contraction of the sphincter along with the relaxation of the bladder

eye. The bronchial muscle is relaxed by the drug as by epinephrine, but its action is much more lasting. The toxicity of the drug is not great. It was shown by Miura that the fatal dose in rabbits was .3 to .46 of a gram per kilogram of weight. Extensive investigation has been done in the Peking Union Medical College to determine its toxicity in lower animals when given over a long period of time, and it seems that it has practically no detrimental effects on the tissues if given in moderate sized doses.

CLINICAL FINDINGS

Since the drug elevates blood pressure it was hoped that it would be of consider-

able value in the hypotension cases, but rather extensive work has been done by Miller², in such cases and he has come to the conclusion that its value is slight. He believes that the low blood pressure in many of these cases is nature's method of decreasing the metabolism, thereby protecting the individual. Chen and Brown have both used it in a number of cases of Addison's disease and obtained remarkable results in the relief of symptoms in some cases, while no results at all in others. It has been used in some cases of acute shock as a means of keeping up blood pressure until the period of shock is passed, but enough work has not been done yet to determine its value. As a mydriatic it promises to be of some value, inasmuch as it causes mydriasis in from forty to sixty minutes with no secondary inflammation, no change in the intra-ocular tension and no untoward effects after prolonged use. It has been advocated by a few as a mydriatic for the examination of the fundus and is employed by them in combination with homatropine. It also gives promise to be of value as an astringent to the mucous membranes. It acts like epinephrine, and when applied in three per cent solution will cause rapid shrinking of the nasal mucous membrane and the contraction will last over a period of considerable time. It has advantage over epinephrine since there is no secondary vasomotor dilatation. In the treatment of hay-fever I have applied it locally to the mucous membrane of the nose, obtaining only temporary relief. I have also used the drug in the treatment of acute urticaria and in about fifty per cent of the cases it seemed to give marked relief. It has proved of slight value in chronic urticaria.

Bronchial asthma and hay-fever are probably the outstanding syndromes in which ephedrin is of therapeutic value. It will relieve especially the bronchial spasm which is produced by allergy, but likewise it will also control a spasm produced by mechanical obstructions in the bronchial tree. It should be understood in the beginning that, again like epinephrine, it has no curative value in the least, but is of wonderful benefit in the relief of symptoms while the etiological agents are being determined. After the offending proteins have been found they should be eliminated or the patient desensitized against them. Its therapeutic value in the treatment of hay-fever consists

chiefly in its allowing a patient to be carried higher in the process of desensitizing. By using it locally and orally it will give slight relief from hay-fever symptoms.

UNDESIRE EFFECTS

There is no tendency toward habit formation even after a long period of its use, and no serious results have ever been reported even in the use of large doses. In about twenty per cent of the cases of hay fever and asthma in which I have used this drug it has been of no value in the least. In another twenty per cent it produced nervousness, perspiration, palpitation, tremor, wakefulness, weakness or epigastric discomfort, and the symptoms were so severe that it required the discontinuance of the drug.

DOSAGE

When I first began to use ephedrin I was advised to give from one hundred to one hundred and fifty milligrams at a dose, but I soon learned that there were extremely few patients who could take such doses. The average dose for the adult is from twenty-five to fifty milligrams. In some of these cases tremor, wakefulness or other unpleasant symptoms were encountered, although the drug gave the desired effect on the bronchial tree. By decreasing the dose little by little and regulating the interval between doses relief from the bronchial spasm may be obtained without the unpleasant symptoms. If one hundred and fifty milligrams given over a period of twenty-four hours, in divided doses, does not give relief from the symptoms for which it was given, my experience has been that a larger quantity will not give results. In children the doses should be in proportion to weight and age. The drug is a stable one and can be given orally in capsules, or in a solution in most any vehicle. A three per cent solution can be obtained and one minim of this solution is equivalent to two milligrams of the drug. It can also be given hypodermatically, and when given in this manner its action is similar to epinephrine in rapidity. When given orally it will usually act in twenty to thirty minutes.

It is a much smaller dilator of the bronchial muscle than epinephrine, and for that reason, if the bronchio-spasm is severe it will not relieve it, so epinephrine should be given and followed by ephedrin. The combination of epinephrine and ephedrin is a happy one. I frequently prescribe them in the following manner. If

a severe attack of asthma appears suddenly, eight to ten minims of epinephrine should be given subcutaneously followed with fifty milligrams of ephedrin to prolong the action of the epinephrine. During the next twenty-four hours about one hundred to one hundred and fifty milligrams of ephedrin in divided doses of from twenty-five to fifty milligrams each should be given. The use of ephedrin for preventing the attack is better than for relieving the spasm after it is already on. Later in case reports the size of the dose given different types of patients will be discussed.

COMPARATIVE ACTION OF EPHEDRIN WITH EPINEPHRINE

1. Like epinephrine, ephedrin relieves the bronchial spasm, although it is a weaker dilator of the bronchial muscle. Unlike the action of epinephrine, which is evanescent, its action is prolonged.

2. Like epinephrine, it produces many untoward symptoms, such as wakefulness, nervousness, dizziness, weakness, frequency of urination, etc. Unlike epinephrine, on the account of its prolonged action, it cannot be used when such symptoms are encountered.

3. Like epinephrine, it can be given hypodermatically with quick action. Unlike epinephrine it is a stable product and can be given orally and for this reason it has advantage over the former.

4. Like epinephrine, it is not habit forming. Unlike epinephrine there is no development of tolerance toward the drug so far as its action on the bronchial tree is concerned.

5. Like epinephrine, if used locally it has astringent properties on the mucous membranes. Unlike epinephrine the secondary vasomotor dilatation of the tissues do not appear.

6. Like epinephrine it will produce a rise of blood pressure in the average individual, but very little rise of blood pressure in the asthmatic.

7. Like epinephrine, the drug has no curative value at all in treatment of asthma, and hay-fever, but is of great aid in relieving symptoms while treatment is being instituted.

CASE REPORTS

By means of the following case reports I wish to outline my method of the clinical use of ephedrin in asthma and hay-fever.

ASTHMA

Case 1. H. E. C., a man aged 39, had severe hay-fever and asthma, perennial in type, for twenty years. He gave a definite family history of asthma, and his intradermal tests showed moderate sensitivity to several grasses, but treatment with pollen therapy was not satisfactory in this particular case. This is, however, very much against the rule. It was the first case that I treated with ephedrin sulphate and I gave him one hundred milligrams during an attack of asthma. For three or four hours following he had marked tremor, tingling sensation of the skin and hair, elevation of hair over the entire head and felt quite weak. Although it relieved his asthma, the untoward symptoms were such that he was unable to continue the drug in such doses. I reduced his dosage, and over a period of eight months this man has been given from one hundred and fifty milligrams of ephedrin sulphate daily in twenty-five to thirty-five and sometimes fifty milligram doses with very pleasing results. During this time he has had one or two bronchio-spasms at night for which I advised the use of epinephrine. For six months prior to this time he had missed but few nights during which from one to three doses of epinephrine had to be given, and for several days over this period he had been unable to work. At the beginning of the use of ephedrin he noticed some unpleasant symptoms, such as tingling of the hair, slight nervousness and so on, even with small doses, but with the continued use of the drug these symptoms entirely disappeared. He developed no tolerance against the drug so far as its ability to relieve the bronchial spasm.

Case 2. W. E. M., a man aged 44, a rural mail carrier, who had suffered from asthma for twenty years. Associated with his asthma was pan-sinusitis and perennial hay-fever. On testing him he was found markedly sensitive to the three ragweeds and Bermuda grass. Treatment over a period of several months gave about fifty per cent relief. He became somewhat disgusted inasmuch as his relief was not as much as he anticipated, so he tried climate for a while, but without relief. On his returning I re-instituted protein therapy and used ephedrin continuously in small doses, and he has been practically symptom free during the past three months. For short intervals he discontinued the use of the drug on ac-

count of difficulty in obtaining it, and his asthma returned.

Case 3. E. R., a girl, aged 16, who had suffered from asthma since she was four years of age. On testing her she was found to be markedly sensitive to feathers. Treatment by the use of ephedrin gave undesirable symptoms, so it had to be discontinued. The patient seemed to develop no tolerance against these symptoms, although she obtained relief from asthmatic symptoms by its use.

Case 4. A girl, aged 8, who had suffered from asthma and hay-fever since three years of age. Testing showed this girl to be markedly sensitive to Bermuda grass. Ephedrin was instituted in doses of fifteen milligrams five times daily, but no appreciable results were obtained. It was increased to a larger dose—as high as one hundred and fifty milligrams a day, without any apparent results.

Discussion: It has been my experience that about twenty per cent of the patients are unable to take ephedrin in sufficient doses to relieve the bronchial spasm without developing unpleasant symptoms of such proportions to require the discontinuance of its use. About fifteen per cent of patients apparently obtain no relief at all from its use, either in small or large amounts. I have found that the use of epinephrine, associated with ephedrin, is a very happy combination. Since epinephrine is a stronger dilator of the bronchial tube, it should be used in case of a marked attack of asthma and followed with ephedrin.

HAY-FEVER

Case 1. Mrs. H. A. D., aged 24, suffered from seasonal hay-fever for fifteen years. On testing she was found to be four plus sensitive to western ragweed. She was treated last year and the season before, obtaining about seventy-five per cent relief from symptoms. Notations on her chart show that I believed at that time that the lack of relief was due to the fact that we were unable to carry her as high as we do many patients on account of untoward symptoms, such as slight attacks of hay-fever, asthma and some urticaria produced by the treatment. This year I used pollen extract of the same strength of that used in previous years, and we encountered untoward symptoms as we reached the high doses just as we did before, but by having this patient take thirty-five milligrams of ephedrin sulphate

fifteen minutes before her treatment of pollen extract, we were able to carry the doses much higher thereby obtaining one hundred per cent relief.

Case 2. Mrs. A. W., a woman aged 34, suffered from seasonal hay-fever for fifteen years — a very severe type lasting from May 20th to frost. On testing she was found four plus sensitive to giant and short ragweed and Bermuda grass. For three successive years she was treated in my clinic, and during this time we had some unpleasant experiences with her, as about two or three hours following her treatment with high doses she developed urticaria lasting two or three hours, although she obtained complete relief from her hay-fever symptoms. This year we advised her to carry fifty milligrams of ephedrin sulphate in capsules and take one as soon as she noticed a prickly sensation of the skin. The ephedrin sulphate usually took sufficiently rapid to control the urticaria.

Discussion: Ephedrin sulphate given for hay-fever symptoms sometimes controls them for a very few minutes, but it frequently makes the patient nervous, so it is not of real value for controlling symptoms. However, in my judgment it is of considerable value in allowing the physician who is doing the desensitizing to carry the patient much higher in their pollen doses, thus obtaining freedom from hay-fever symptoms. Many cases who otherwise would not obtain relief, as the doses of pollen extract could not be carried sufficiently high without untoward symptoms, may with the use of ephedrin take the necessary high doses of pollen extract for complete desensitization.

CONCLUSION

1. Ephedrin is the most important addition to the armamentarium for the treatment of asthma and hay-fever since the discovery of epinephrine.

2. After using it in more than one hundred cases of asthma over a period of several months for relieving and preventing asthmatic attacks, it has proved to be of considerable value in at least sixty-five per cent of the cases.

3. Its physiological action is probably entirely due to its stimulation of the vegetative nervous system.

4. The drug is comparatively non toxic, non habit forming and a tolerance to it is not developed.

5. In about twenty per cent of cases its use produces unpleasant symptoms, such as nervousness, wakefulness, urinary frequency, tremor, etc., to the extent that it cannot be successfully used.

6. Its advantages over epinephrine are as follows: (a) It can be given orally. (b) Its action is prolonged. (c) Tolerance to the drug is not developed.

7. Like epinephrine, the drug is not curative in the least, but is of great value in relieving and preventing bronchial spasm while the factors producing asthma are being determined and eliminated.

8. In hay-fever, the only practical value of ephedrin is in its ability to relieve untoward symptoms in the use of protein therapy, thereby allowing desensitization to be very much more complete.

9. In my hands it has been most helpful in preventative doses, given orally, in combination with epinephrine, given hypodermatically, for the relief of marked paroxysms.

10. Physicians should not lose sight of the fact that the drug, like epinephrine, is only palliative, and that good results in the treatment of asthma and hay-fever cannot be hoped for unless the proteins to which the patient is sensitive have been removed or the patient desensitized to them.

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HYPERTENSION*

C. E. SEXTON, M.D.
STILLWATER

In the subject of hypertension or abnormally high blood pressure, we are interested primarily in arterial blood pressure or, as would probably be more fitting, arterial tension.

The blood, we all understand, lies within a closed system of vessels, and is kept moving round and round in very much the same way that the water in a steam heating plant is kept in a state of circulation, except that in the blood vessels the blood is kept circulating by means of the power of contractions of the heart, very

much as the water is forced through the mains of a city water system by means of the power and force of the engine at the power plant of such a system.

The construction and character of the vessels through which the blood stream is forced form a most important part of the mechanism of blood pressure.

The walls of the arteries are furnished with elastic tissue, which gives them elastic properties, by which they are distensible under force.

Their walls are also furnished with the vaso-motor muscles by whose contraction and relaxation the arteries can be constricted and relaxed respectively, as needed to equalize the pressure or tension of the blood within, with its driving force of the heart contractions behind it.

We have then as factors in the resistance offered by the vessels of the flow of blood, three main elements:

First—The friction between the blood stream and the vessel walls.

Second—The elastic recoil of the arteries.

Third—The contraction of the vaso-motors.

Then we have the net result of these factors on the one hand, and the force of the heart beat on the other hand, which constitutes blood pressure, or tension.

Of the above elements as factors, the elastic tissue furnishes a natural resistance to the blood stream, when in a normal quantity and condition, and when in an abnormal quantity or condition, as in old age, we have one of the elements causing high blood pressure or hypertension.

The vaso-motors of the blood vessel walls play a larger part in the variations of blood pressure than any other single factor, in health.

The vaso-motors are under the nerve control of the sympathetics, and normally their purpose is to equalize the pressure, so as to maintain a general average of pressure throughout the whole body.

Thus we come to one of the cardinal reasons for rest and quiet and long hours of sleep for a patient with hypertension, and especially if the patient is of a nervous or irritable temperament.

Everything else being equal, blood pressure is raised by any condition which increases either the force of the heart beat, or the resistance of the blood vessels or

*Read before the Section on General Medicine, Neurology, Pathology and Bacteriology, Annual Meeting Oklahoma State Medical Association, Oklahoma City, June 22, 23, 24, 1926.

both, and conversely is lowered by any condition which decreases either or both of these factors.

Ordinarily, observations of the systolic pressure alone are of relatively little value.

They indicate, it is true, the strain to which the arteries are subjected, but the diastolic pressure is the real indication of the work the heart has to do.

Systolic pressure may suddenly vary greatly from any of a number of diverse causes, principally nervous, as fright, excitement, great joy or sorrow, but the diastolic pressure is a much less easily disturbed factor, and may hence be a valuable criterion in deciding whether organic, vascular or cardiac changes are present, and hence a key to the disease, causing an abnormal pressure.

The variations or difference between the systolic pressure and the diastolic pressure represents the pulse pressure, and should represent approximately one-fourth of the normal systolic pressure.

The normal pulse pressure in adults ranges between 30 to 50 mm.

A pulse pressure of 35 mm. approximates an average normal, for individuals below the middle period of life.

A pulse pressure persistently as low as 20 or as high as 60 mm. is definitely pathological and will nearly always indicate some grave disease.

Large pulse pressures are most commonly encountered in aortic insufficiency, chronic nephritis, arteriosclerosis, exophthalmic goiter or in many vaso-motor crises.

Small pulse pressures are most commonly met with in asthenic conditions, when the muscles are no longer able to supply the systolic output.

This is often seen in failing compensation, in mitral and aortic obstruction, in shock, collapse, anemia, hemorrhage and cachexia.

A high systolic, with a normal diastolic pressure may result from emotional disturbances and as a result of physical exertion.

A low systolic and high diastolic pressure often indicates myocardial weakness in association with severe pressor factors such as nephritis.

A low systolic and a low diastolic pressure occurring in a person who is up and going about, is definitely associated with

diminished reserve force and vitality from whatever cause.

A high systolic with a low diastolic pressure is characteristically seen in aortic insufficiency.

However, one thing should be kept definitely in mind, and that is, that hypertension is not a disease, but a symptom of disease just in a similar relation as fever is not a disease, but a symptom of disease, and the sphygmometer should be used as a means of finding and measuring the degree of a symptom in a similar way as we use a fever thermometer.

Systolic blood pressures above 235 mm. are unusual and above 250 mm. are rare. in a woman of about forty years of age. I remember recently having one of 290 mm. It is needless to say, such a pressure could not long be maintained without something giving way.

Many patients live for years with a pressure ranging around 200 mm. systolic and 120 mm. diastolic, but a sudden termination in these cases is always a possibility.

Arterial hypertension is generally a condition of gradual development extending over a period of years of time, and with a tendency to increase.

It is found more commonly in men than in women, but high pressures are generally better and longer borne by women, because of their more ready adaptability to a restricted life, and to their lessened exposure to sudden hypertensive influences.

The classification of arterial hypertension is sometimes as follows:

1. Demonstrable nephritis, as evidenced by urinary findings, retinal lesions, cardiac hypertrophy and accentuation of the aortic second sound.

2. Demonstrable arteriosclerosis as indicated by radial thickening tortuosity of the temporal arteries, cardiac hypertrophy and retinal arteriosclerosis.

3. A combined type in which both renal and arterial lesions are found.

4. Non-nephritic hypertension, about which there is much discussion. In these cases, are classed those due to endocrine disturbances, and miscellaneous toxemias, and the so-called essential or neurovascular types about which there has been a great deal said and written and apparently little definitely known. These cases are so similar to those attributed to endo-

crine disturbances, that in few instances is it possible to differentiate between them.

The one and only distinguishing symptom which I have ever known to be advanced as a positive diagnostic symptom between the two types is that in the neuro-vascular type the patient has sweating and clammy hands and feet. Whereas, in the endocrine type, especially where the thyroid is involved, the patient has a dry and sometimes flushed skin of the extremities.

One thing, the endocrine types are found much more frequently among women than men. Whereas, in the neuro-vascular type there seems not to be a great many more women than men with this type.

Time will probably bring forth more definite and correct knowledge of this condition.

The symptoms of arterial hypertension are as follows:

a. Cardiovascular-Dyspnea, palpitation, vertigo, sense of oppression, especially on going to bed, angina pectoris, muscular cramps, especially spontaneous, edema of the lungs and erythemia.

b. Renal symptoms — polyuria — with nocturnal micturation — the urine having a very low specific gravity and containing a few hyaline or granular casts and only a trace of albumin.

c. Gastrointestinal symptoms — dyspeptic symptoms with eructations, flatulence, hyperacidity, constipation, epigastric pain and tenderness.

d. Nervous symptoms — headaches, nervousness, restlessness, irritability, inability to concentrate, easily fatigued from mental exertion, insomnia, numbness and tingling of extremities, migraine, sometimes transitory aphasia and finally hemiplegia.

e. Other symptoms that may be mentioned are spasmodic ocular symptoms without definite lesions and retinal hemorrhage.

The physical signs of arterial hypertension are:

1. Heart hypertrophy — chiefly of left side, splitting or reduplication of the aortic second sound, later in the case systolic murmurs at the mitral or aortic area, cardiac or aortic dilatation, arrhythmia, or auricular fibrillation.

2. Arteries; flushing and duskiness of the face and hands, a hard relatively incompressible pulse, cervical pulsation, tor-

tuous and superficial temporal arteries, retinal vascular sclerosis and rhythmic head movements.

About one-third of all cases of arteriosclerosis have normal or subnormal pressure. In the remaining two-thirds the pressure is variably increased, depending mainly on the degree of renal involvement. The evidence now at hand points strongly to the view that hypertension when present in arteriosclerosis is due to spasm or sclerosis of the systemic arterioles. While therefore the dictum that a man is as old as his arteries holds good, yet it appears that the condition of the smallest arteries is more important than the largest ones; and further, we are not justified in assuming that because the radial artery shows extensive disease, the more vital arteries and arterioles are therefore correspondingly involved. On the contrary, while the radial artery may show little evidence of abnormality, the resistance in the arterioles may be greatly increased. Osler has stated that one of the causes of arteriosclerosis is high blood pressure, the other causes being wear and tear, infection and intoxication.

In regard to a few of the more grave diseases associated with hypertension in its various degrees and forms, I will first mention aortic insufficiency, where we would expect a systolic pressure of 180 to 200 mm. and a diastolic of 60 to 30 mm. This condition would not be positive but presumptive evidence.

A similar systolic pressure with a lower diastolic pressure would be a more presumptive evidence of aortic regurgitation.

In valvular lesions of the heart the blood pressure will often not vary much from normal. This will depend on the degree of compensation.

The same is true of myocarditis except that in the terminal stages an elevation will usually be found.

In the case of a patient of early or middle life, with a rapid excitable pulse, with a mediumly high systolic pressure, and especially if the patient be a woman, it is well to eliminate hyperthyroidism before making a definite diagnosis.

A few other conditions where a medium high blood pressure is unaccounted for otherwise, may be mentioned possible lead poisoning, sometimes the earliest stages of pulmonary tuberculosis, chronic morphinism, large pleural and peritoneal effusions and epidemic cerebrospinal meningitis.

As regards the use of tobacco, this subject has been very much discussed but, I believe, it is pretty generally agreed, that the blood pressure is lowered because nicotine is a motor depressant, although the first effect is as an excitant. It has yet to be shown that the career of moderate smokers are shorter than that of non-smokers.

Stone has found in his studies that, while the clinical symptoms of hypertension generally do not appear until the overload on the heart exceeds 25 per cent, and with a modification of the habits of life 50 per cent may be borne, yet with an overload of 50 per cent myocardial exhaustion may be precipitated by any sudden strain.

The increased blood pressure which occurs in connection with renal disease, especially with that form which is clinically designated as chronic interstitial nephritis, is the most striking and diagnostically, perhaps, the most important abnormality of arterial tension which is met with in the whole domain of medicine. There seems now to be a tendency to revert to the old concept to the effect that the arterioles — that it is primarily a vascular disease of which the renal changes are but secondary manifestations. Certainly it is a fact that the clinical picture, as well as the blood pressure findings, are quite different from those of other forms of renal disease.

It is here we find a great per cent of high blood pressure cases, and it is here we have an opportunity to gain greatly, if we can diagnose the cases early.

A great deal is being said and written at the present time about the influence of endocrine unbalance in hypertension. For my own part, I have failed to find much that seems to me to be proven to have such an effect, except probably excessive action of the gonads and suprarenals, and to a lesser extent, the thyroid.

Most writers indicate that in the cases due to these causes and to the toxemias, that in due time the cardiovascular or more often the renal type of hypertension will be found to have developed, so that such might have been the cause in the early stages when first attributed to other causes.

Some of the complications of hypertension are as follows:

Uremia — Chronic uremia is associated with high, acute uremia with very high

blood pressure. The latter is sufficiently marked to be of great diagnostic value. The increment in pressure depends largely on the height of the preceding average pressure. When this has been low, increases of 100 per cent are not unusual.

The cause of these sudden increments of tension is not and cannot be known until the causes of hypertension in nephritis and the nature of uremia have been elucidated, but the hypothesis that many of the uremic symptoms are the direct result of abnormal local pressure relations is extremely plausible.

The symptoms of uremia are well known and require no special consideration.

Paroxysmal Dyspnea — Paroxysmal attacks of increased tension and dyspnea are not uncommon in arteriosclerotic subjects, especially with renal involvement. It is quite likely that these phenomena are due to irritation or disease of the depressor nerve in the aorta.

Paroxysmal dyspnea may also occur when the cerebrospinal pressure becomes too high. Such attacks may be associated with cerebral symptoms — headache, vomiting, vertigo, and with subjective oppression and respiratory acceleration, but without pre-existing asthmatic symptoms. It has been suggested that although certain forms of non-cyanotic dyspnea frequently described as “renal” or “cardiac” are associated with high blood pressure, they are basically due to renal defects and are directly dependent upon an acid intoxication.

Cheyne - Stokes Respiration — Cheyne-Stokes breathing is frequently encountered in association with arterial hypertension. This symptom, when occurring in association with experimentally increased intracranial tension, has been shown by Cushing to be accompanied by high pressure during hypernea and low pressure during apnea.

The intracranial tension being higher than the general blood pressure, cerebral anemia exists and apnea is present. The vaso-motor centres are automatically stimulated to raise the general blood pressure in an effort to produce an equilibrium between it and the intracranial tension. As the general blood pressure rises, respiratory movements recommence; at their height the vaso-motor centres are no longer stimulated, the general blood pressure again falls.

Acute Pulmonary Edema—Pulmonary edema may occur in patients with chronic vascular hypertension. Attacks are preceded by a rise of both systolic and diastolic pressures. During the attack the maximum pressure, which has been very high (240 to 280 mm.), falls greatly, the minimum slightly. At such times venesection, although often beneficial, exerts but little effect on the pressure. After the attack, in cases with recovery, the pressure rises gradually to the normal. The primary disturbance seems to be some influence on the nervous system which interferes with the normal regulation of the case of an already diseased heart.

It has been suggested that attacks of pulmonary edema in nephritis are the result of an effort on the part of the system to rid itself of urea and chlorides.

Apoplexy—Vascular rupture is naturally more apt to occur if blood pressure changes, in addition to being great, are sudden.

It is not surprising therefore to find that fits of anger, fright, sudden stooping or heavy lifting and especially after a heavy meal, are often the precipitating causes of vascular rupture and angina attacks.

Pressure differences in corresponding extremities are not infrequently seen in cases of hemiplegia.

Whether these differences depend at all on the position of the lesion and completeness of the paralysis has not been determined.

In hemiplegia, from a cerebral hemorrhage the pulse pressure is always high, while in a thrombosis the pulse pressure is less than normal for the existing diastolic pressure. If the hemiplegic is found to have a high and rising pulse pressure, he is sure to die of his hemorrhage, or if the pulse pressure is low and falling, the thrombosis patient will die of his thrombosis.

The causes of death in cases of hypertension are usually apoplexy, uremia, angina pectoris, broken cardiac compensation or from intercurrent disease.

If general treatment does not reduce the blood pressure, the kidneys are probably sufficiently sclerotic to require the excess pressure in order to eliminate sufficiently to keep the patient within the limits of safety from that source.

A pressure of 200 mm. or over rarely returns to normal. A pressure which has

stood that high for a very long period of time cannot be expected to fall much below 160 or 170 mm. To do *this* may be considered a very good attainment. Such cases, after a period of years, usually fall lower of themselves, owing to the weakening of the heart, and the outlook for such cases is not favorable for any great length of time.

Hypertension per se is no more of an indication for treatment, except along preventive lines, than is the presence of a heart murmur. Hypertension is one of nature's methods of compensating circulatory or visceral deficiency.

The direct reduction of blood pressure by means of drugs or otherwise is a procedure which should only be undertaken after the most careful consideration of the case from all its aspects. We must never thoughtlessly or ruthlessly interfere with nature's delicately balanced mechanics of compensation. Only in the face of impending circulatory failure or vascular rupture or temporary pain is direct treatment indicated.

The reduction of vascular hypertension relieves the heart of an immense amount of work — entirely unnecessary work in cases in which the high arterial pressure results from the toxic factors attendant upon a faulty mode of living.

Since about 10 pounds of blood are pumped by the heart per minute, it is self-evident that an increase of pressure ranging between 10 and 50 mm., not to mention higher figures, must call for the expenditure of an enormous amount of cardiac work. Furthermore, the heart which is called upon to meet such demands is often already affected by arteriosclerotic changes. The wear and tear on the vascular system is of course a no less important factor. Dilatation of the aortic arch, even in non-syphilitics under fifty years of age, is of fairly frequent occurrence in cases of nephritic hypertension.

In cases of extreme emergency, where it is urgently necessary to lower blood pressure, as in symptoms of impending apoplexy or cases of aortic aneurysm with symptoms of imminent suffocation, or acute pulmonary edema, venesection is indicated. In cases of threatened actual angina pectoris, nitrate of amyl is the method of choice. Also sodium nitrate, gelsemium in large doses and anterior pituitary gland extract will also temporarily lower blood pressure.

Medicines, aside from purgatives and eliminants, are of little value except for temporary results.

Generally speaking, the first step is to secure absolute rest with the patient on a milk and vegetable diet. Regular and free evacuation of the bowels is essential.

In spite of all the claims to the contrary, I believe that good and regular elimination, the leading of a quiet life, with mild exercise regularly in the open air, after a few weeks complete rest in bed, with a diet principally of milk, and especially buttermilk, with certain fruits and vegetables, and with regular warm baths and massage will accomplish more permanent benefit for these cases than anything else.

In this paper I have attempted only to strike the high points of this subject, as to go into detail of all the many theories regarding some phases of the subject, and to discuss the pressure and variations of pressure in all the ills with which it may be associated in one way or another at some period or stage of the disease, would be almost an endless task.

The degree and character and time of such pressure is ordinarily a minor matter, anyway, except principally in the diseases specifically mentioned earlier in this paper.

Rather than to go into thorough and tedious detail of all conditions in which hypertension may be a more or less minor or transitory factor, I have endeavored to bring out the most important points of this condition and its relation to the most commonly found and most important diseases with which it has been found to be a major factor.

ENDOCARDITIS AND VALVULAR DISEASES OF THE HEART IN CHILDREN.*

M. L. LEWIS, M.D.
ADA, OKLA.

I wish to say by way of explanation before entering into my subject that I have not attempted to give you detailed bacteriology and pathology as found in these cases. I shall endeavor to discuss these diseases from the view point of a general practitioner.

Acute Endocarditis is extremely rare in children under three years of age, but may be found at any age, even in fetal life, however, it is much more common in children between the ages of five and ten years.

Endocarditis is primarily an inflammation of the endocardium but is almost always associated with, or accompanied by some degrees of myocarditis and pericarditis; therefore, we find it impossible to consider the one and completely ignore the other.

In the great majority of cases endocarditis must surely be considered as a manifestation of rheumatism and not a complication as it is so often considered.

One or more attacks of endocarditis will produce chronic valvular disease, therefore chronic valvular disease of the heart is simply the end result of acute endocarditis which has brought about certain changes in the valves and has produced a permanent lesion.

One may ask in what way these diseases differ in children from the same disease in adult; briefly the conditions met with in children and not in adults are: The mitral valve is much more frequently involved in children, and the lesion is usually mitral regurgitation, aortic lesions are far less common than in adults and when found the lesion usually produces aortic insufficiency. Tricuspid insufficiency is extremely rare except as a result of dilation from a mitral lesion, tricuspid stenosis and pulmonic insufficiency are practically unknown in children except as a congenital lesion.

Probably the most important factor to be considered in children and not found in adult life is that of extra work placed upon the heart as a result of the child's growth, this especially is an important factor at the age of puberty. You will readily see that in a child the heart must not only carry on its ordinary work but must take care of the growth and development of the child.

Acute endocarditis is very frequently associated with chorea and rheumatism and is often spoken of as being secondary to, or a complication of, acute arthritis, but in my experience I have come to consider it as a manifestation of rheumatism and not as a complication except in rare instances. I also consider chorea a symptom of rheumatism.

Sex is probably to be considered as an etiological factor in this disease. In look-

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ing up reports in regard to this I find the percentage runs about sixty per cent in girls, age also seems to play a part, the disease being more frequent between the ages of five and ten years. However, I think it possible that this may be due to the fact that this is also the ages where children are more exposed to all acute infectious diseases. Acute endocarditis may be found as a complication of any acute infectious disease but more often complicating scarlet fever, diphtheria, measles and tonsillitis; the vegetative types are more often due to rheumatism and is due to an accumulation or localization of bacteria on the valve brought there thru the blood stream. Acute ulcerative or septic endocarditis is nearly always secondary to some acute infection.

Chronic valvular disease is as before stated the end result of one or more attacks of acute endocarditis. In the chronic stage it is usually impossible to isolate any kind of bacteria.

Pathological changes in the valves produce the different murmurs. In the case of mitral regurgitation, in fact any regurgitant murmur, is due to the failure of the valves to completely close thereby allowing the blood to regurgitate through the opening. Stenotic murmurs are produced by a partial obstruction caused by narrowing of the opening or a constriction, or by a roughening of the valves.

Organic heart murmurs may be classified as systolic, diastolic and presystolic. Character and location of the murmurs are determined by associating them with certain phases of the cardiac cycle.

I am sure we are often inclined to consider a heart murmur of primary importance, but this is a mistake. In my opinion the more important thing is to determine the possible changes in the muscle wall of the heart. It is surely more important to know whether we have enlargement of the heart, and if so whether this enlargement is due to hypertrophy or dilatation, and to what extent. In considering murmurs we should always bear in mind the importance of differentiating organic and functional murmurs. Frequently this cannot be done except by determining changes in the muscle wall of the heart.

Acute endocarditis or chronic valvular disease may frequently be present and yet present no symptoms. It is a common idea of the laity and apparently with some

physicians that heart disease of any nature must necessarily present a chain of grave symptoms, and for this reason many cases go unrecognized until the case has reached a stage of broken compensation. It is not an uncommon thing to find chronic valvular disease in making a routine examination and where heart disease has not been suspected, and surely a great many of these cases completely recover without ever having been recognized.

When symptoms are present in acute endocarditis we have a wide variation. The fever may vary from 100 to 105, depending upon the severity of the infection. In those cases of high temperature we frequently find them ushered in by a rigor, especially in older children. The pulse is always fast in proportion to the temperature. There is usually some pain over the precordium and often pain in the joints which is usually migratory and may be found in any joint. The child shows some prostration and shortness of breath. Anemia is an early complication and when it progresses rapidly it is a very grave symptom. Your diagnosis will be made from the presence of a part or all of the above symptoms manifested in some degree. If the diagnosis is not made until the chronic stage of valvular disease the above symptoms will not be present only in part, and your diagnosis must be made by determining the character and location of a murmur associated with hypertrophy or dilatation.

Chronic valvular disease may be conveniently divided into two stages or periods. The first being that in which the heart compensates; second, cases of broken compensation.

The duration of the stage of compensation is dependent entirely upon the extent of your infection and the care that the patient is given. During this stage of compensation you may have mild symptoms, such as shortness of breath upon slight exertion and mild pain, palpitation, nose bleed, anemia and loss of weight, and these symptoms, as a rule, are not manifested except in cases where the patient has some other condition, which lowers the general vitality such as an attack of ordinary cold or gastro-enteritis.

The second stage in which we have broken compensation is usually brought about by one or more of the following cases: An acute exacerbation of rheumatism, with a new endocarditis, or, physi-

cal exertion, or as a result of a prolonged attack of any acute infection. In other words, this condition may be brought about by anything which seriously affects the patients nutrition and hygiene, particularly if associated with much anemia.

The symptoms indicating failure of compensation are marked dyspnea, orthopnea, chronic cough, with signs of pulmonary congestion, or edema. The obstruction to the venous circulation leads to dropsy, which usually begins in the feet and lower limbs, but sometimes in the hands and face, followed by a general anasarca, with fluid in the peritoneal cavity, and with engorgement of the liver, producing obstruction to the portal circulation. It is rare to have all these symptoms present in a very young child but common in children who have reached the age of puberty.

Acute endocarditis is rarely fatal in children except in severe cases, associated with myocarditis or pericarditis. As a rule the younger the child the graver the prognosis. Complete recovery is so far as murmurs and physical signs are concerned is possible, even in cases of a very large heart and with murmurs present for a number of years. Not many children die from chronic disease, that is to say, children under ten years of age.

In any given case the amount of hypertrophy or dilation is much more important than the character and the location of a murmur. The one important thing in the prognosis of acute or chronic heart disease in children is the care and attention to the murmur which so often may be functional, but let us look carefully to the possibility of changes in the muscle wall of the heart.

The first and certainly the most important indication in the treatment of heart disease is to take work off of the heart in every way possible. I do not feel that I have begun to treat my patient until I have put that patient as near at rest as possible. I mean by that — that these cases should be put to bed during the stage of acute infection and for several weeks following, and in broken compensation in chronic cases the necessity of absolute rest is just as great. I do not mean a few days in bed but the average case which requires treatment at all should have from three to six months in bed. In connection with this it is very important to see that the patient has a well balanced diet of wholesome and nourishing food. Its gen-

eral condition must be closely watched and every effort made to build up its resistance and promote its growth.

Absolute confinement in bed as I have recommended is not necessary in chronic valvular disease where the heart is completely compensating, but in these cases I have found that I can often greatly improve my patient's condition by confining him to bed a certain number of hours during the day. These cases if restricted too much will rebel and confinement in bed may aggravate their condition and offset any good that might be done. When I find this to be the case I allow this child to have certain amount of play and exercise but watch them closely and see that their heart stays well within the stage of compensation.

Medical treatment, in my experience, has been of very little value in any of these cases. There is probably some good to come from the use of salicylates in those cases complicating or associating with rheumatism. I do not hesitate to use narcotics in acute endocarditis when it seems at all necessary to control pain and restlessness. An ice bag kept over the heart during the acute stage will be of some value in slowing the heart and controlling the temperature. Some form of narcotics will frequently be found necessary in chronic cases of broken compensation where dyspnea or orthopnea are present, in which cases I prefer morphine and atropine, in sufficient dose and as often as the occasion may demand.

DISEASES OF THE HEART AND BLOOD VESSELS.*

O. W. RICE, M.D.
MCALESTER, OKLA.

The disease that stands at the head of the list of causes of death in this country, certainly deserves our most careful consideration and study. We hear lots about cancer, we have cancer clinic, cancer lectures, all kinds of cancer pamphlets to be passed to the laity, and in fact the intelligent laity know about as much about cancer, its cause and treatment as the profession. The subject of T. B. has been worked over time for years, any child who knows the way home from the corner gro-

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cery knows what T. B. means and knows how to avoid it, and something about how to treat it. This knowledge has been of considerable benefit.

How many know anything about Cardio-Vascular Disease? And yet, this is the real instrument that the Grim Reaper uses; day in and day out, above all others in harvesting his crop. We have our county health units who inspect our schools, send our children home with a minor skin disease, to the dentist and to the eye, ear, nose, and throat men for a minor defect, and yet will permit a child with a serious heart lesion to "pass on" and engage in all manner of sports and athletics when by so doing he will certainly do himself a great injury. His heart and blood vessels are kept busy continuously patching up broken compensations which they are able to do when the heart muscle is young. Finally, there comes a break that can no longer be patched up and the young adult is made a cripple during the balance of his short life. This statement is made after serving fifteen years on the school board and witnessing many inspections and examinations of the children.

Every child upon entering school should have his heart examined by someone who has knowledge and experience in such work and is able to recognize slight pathology of this organ. When it is found, its exact nature should be thoroughly explained to the parents and teacher and his activities while in school and his future career out of school should be regulated strictly in accordance with this defect. Instead of foot racing, vaulting, football, and basketball, it should be tops and marbles and etc. His life work should be selected with a knowledge of his heart defects before him. Heart lesions, and they are quite numerous, are certainly more important than diseased eyes, nose, and throat. In the former, life itself is at stake.

It would be impossible in a short paper as this must be to even mention briefly all of the many diseases of the heart and blood vessels. I will confine myself in this paper to Chronic Valvular Heart Disease. I spent a few weeks in St. Louis not long ago, and attended some clinics and heard some very interesting talks on this subject. Much in this paper is taken from notes I made while there, also from a little book by Oliver T. Osborne.

Valvular heart disease is a natural sequel to an acute endocarditis, which may,

it must be remembered, have been very mild or may even have entirely escaped observation, and while Chronic Valvular Heart Disease is a sequence to endocarditis, endocarditis in turn is due to rheumatism, chorea, scarlet fever, syphilis, pneumonia, influenza, tonsillitis, and pyorrhoea. When a child five years of age or under develops an endocarditis the likelihood is that it is not associated with rheumatism, since that disease is very uncommon at this period of life. More probably the cause was pneumonia, scarlet fever, or some other infectious disease. After the age of five years, investigation shows that probably 75 per cent of the cases of endocarditis depend upon rheumatism. The rheumatic manifestations may have been torticollis, or possibly tonsillitis, as it is sometimes a manifestation of rheumatism and not the cause of it, or chorea or the endocarditis may have been the primary rheumatism affection; rheumatic, as shown later by the tendency to distinct rheumatic symptoms in other parts of the body.

In studying valvular disease the only two valves that need much consideration is the mitral and aortic, stenosis and insufficiency. Of these four lesions sometimes more than one is found in the same case, only in childhood, where mitral insufficiency usually occurs alone and is practically the only valvular disease of childhood.

In 150 fatal cases of Chronic Heart Disease in children reported by Lees & Poynton, the mitral valve was found at autopsy involved in 149, no lesion was found in the remaining case. A lesion of the aortic valve was present in 51, but always in combination with lesions of the mitral valve. Not a single case where aortic alone was affected. Dunn of Boston studied 262 cases of valvular disease resulting from rheumatism and in all of the cases but one a mitral lesion was present. Still of London analyzed 250 cases studied clinically. Here mitral insufficiency was found in 241. We may reasonably conclude, then, from these figures that in chronic endocarditis in childhood the mitral valve is involved in practically every instance and in nearly all of these the lesion is mitral insufficiency with or without stenosis. Mitral stenosis alone occurs very infrequently in children, this in sharp contrast with the findings in adults, in whom mitral stenosis quite frequently occurs. Aortic insufficiency even

when combined with other lesions is much less common in children than adults. Aortic stenosis practically is not found in childhood. When in a case of a child we hear a systolic murmur situated at the Aortic cartilage and transmitted into the vessels we should never conclude that we are dealing with an Aortic lesion unless there is no other conceivable explanation.

Mitral stenosis occurs most frequently in women between fifteen and thirty, and is generally the result of rheumatic endocarditis, but may be due to other infections or chronic disease such as nephritis. With this lesion, blood unable to pass through the contracted opening, is dammed back causing passive congestion of the lungs. Patients with this lesion are seriously handicapped when any congestion of the lungs occurs, such as pneumonia, pleurisy, or bronchitis. Asthma is especially serious in this case, and these patients rarely live to old age. The pulse is generally slow, dyspnea or exertion, increased secretion of mucus in bronchial tubes and throat with considerable cough. An acute heart attack causes a feeling of suffocation and dyspnea may be very great although tachycardia does not occur. The heart must go slow in order to permit as much blood as possible to pass through the contracted opening. The diagnostic physical sign of this lesion is the diastolic murmur heard over the left ventricle, louder at the apex and transmitted to the left of the heart.

Mitral insufficiency is the most frequent form of valvular disease and is due to a shortening or thickening of the valves or to some adhesions which does not permit the valve to close properly. The most common cause is rheumatism. The murmur of this lesion is a systolic blow, situated at the apex, transmitted to the left of the thorax, generally heard in the back. This is not only the most frequent but the safest cardiac lesion to have, sudden death is unusual, the compensation seems to be most readily maintained and the patient is not so seriously affected by over exertion or by inflammation in the lungs. When compensation fails with these patients the first sign is pendent edema of the feet and ankles, while in mitral stenosis we have severe dyspnea. Patients with this lesion are usually children or young adults and the heart muscles readily respond; later, in these patients or in older patients, the return to compensation does not occur so quickly.

Valvular lesions at the aortic orifice are much less common than at the mitral orifice and stenosis is less common here than insufficiency. While the mitral is occupied by women and children the aortic is reserved for the "old sports" who comprise 75 per cent of the cases, 80 per cent of whom are men. While 75 per cent of mitral valve lesions are due to rheumatism, 75 per cent of the aortic valve lesions are due to syphilis and mostly men who have received practically no treatment. Tobacco, lead, and hard work also cause this lesion. The murmur caused by aortic stenosis is a systolic one heard loudest at the second intercostal space at the right and left of sternum, it is transmitted up the arteries into the neck. This lesion alone may allow a patient to live for years, but sooner or later with a failing force of the blood there will be anaemia of the brain causing syncope or fainting. They also have cardiac pain. Little excitements or over exertions are likely to make the heart attempt to contract more rapidly than it is able to drive the blood through contracted orifice. This causes cardiac discomfort and a feeling of cardiac oppression. These patients should not hasten and should not become excited. Any drug or stimulant which causes cardiac excitement is bad.

Aortic insufficiency, while not so frequent as mitral lesions, is frequently found and is the most dangerous heart lesion and one that frequently ends in sudden death. The physical sign of this lesion is the diastolic murmur heard loudest at the base and is transmitted up in the neck and into the subclavians with marked pulsations of the arteries (Corrigian Pulse). This lesion often causes pain from over distention of the left ventricle. These patients should not do hard work and if digitalis is used it must be in small doses and guarded. The pulse must not be slowed below 80. If it is slowed too much, the regurgitation into the left ventricle is increased and sudden anaemia of the brain or acute dilation may cause death.

Lesions of the Tricuspid and Pulmonary valves are either congenital, or a sequence of other valvular defects.

There is lots that could be said regarding the prevention of heart lesions, but time will not permit, however, I wish to make this statement in passing. Cases of rheumatism, tonsillitis, tooth infections, diphtheria, scarlet fever, typhoid fever, measles, influenza, and syphilis, often do

not receive the attention that nature of the infection demands. They are not kept confined to home and bed long enough, their heart is not watched closely enough. The endocarditis with valvular lesion often occurs several weeks after the acute symptoms of the disease has subsided. They should be followed up, their chest gone over at least once a week for several weeks, if symptoms of endocarditis with valvular defect develop they should be put to bed and kept there, this is usually all that is necessary, till all of the symptoms subside. These patients are usually children or young adults and a good recovery may be expected. Syphilis untreated is followed by Syphilitic Aortitis with lesions of the aortic valve in perhaps 100 per cent of the cases.

Pregnancy is a serious thing for a damaged heart. A young woman with heart disease should not be allowed to marry. The most serious lesion a woman may have, as far as pregnancy is concerned, and the most common one during the child bearing age, is mitral stenosis, and increased abdominal pressure interferes with her lung capacity, and her lungs are already over congested. The left ventricle may be small in mitral stenosis, and therefore her general systemic circulation poor. For these two reasons mitral stenosis should absolutely prohibit pregnancy. If a woman becomes pregnant while there are symptoms or signs of broken compensation, there can be no question medically or morally, of the advisability of evacuating the uterus. The same rule is true, if during pregnancy the heart fails, compensation is broken, and the usual symptoms of heart weakness develop, provided a period of rest in bed, with proper treatment has shown that the heart will not again compensate. Patients who have successfully passed through the danger of pregnancy with cardiac lesion, possibly relieved by radical treatments, should be warned against ever again becoming pregnant. An operation rendering them sterile, in my opinion, would be the proper procedure. Acute dilation is not an infrequent cause of death during ordinary labor, and is more apt to occur in these cardiac patients.

Chronic valvular lesions where compensation is not broken need no medication. They need only good wholesome advice. How to eat and drink, how to work and play, to be taught how necessary it is to eradicate all foci of infection, and to avoid

all infections of the respiratory tract or otherwise that we know was the cause of the lesion in the first place and will certainly do him further damage if reinfected. I heard Cabot make this statement at Dallas a number of years ago. That he had never yet seen a coffee, a tobacco or an alcoholic heart. I dislike very much to take issue with a man of his caliber, my only explanation is he has not practiced medicine in Oklahoma as long as I have, and this statement was made before the Passage of the Volstead Act. He has recently written "Facts on the Heart." I suspect he mentions these things in this new volume. Anyway it is my opinion that a man with a valvular heart disease, as well as the rest of us, would do well to leave them alone.

Osborne's outline of the treatment of broken compensation included the following five topics: hygiene, diet, elimination, physical measures, medication.

Hygiene. Of all treatment for broken compensation or dilated heart, nothing equals rest in bed. Sometimes it is the only treatment that is needed. The rigidity of this rest, the length of the time that it should endure, and the period at which relaxation of such rest should be allowed depend entirely on the individual patient; no rule can be established.

Patients past fifty should not be confined to the bed very long. If so it will be very difficult to get them out again, however, exercise should be greatly restricted. Children and young adults can be kept in bed for a much longer period.

Diet. If there is dropsy the so-called dry diet is of great value. The value of a salt-free diet is not so great as in kidney lesions and if it causes hardship it should not be continued.

Elimination. A patient who has developed decompensation has always imperfect elimination. The emunctories, the four doors, skin, bowels, kidneys, and lungs should be kept open.

Physical Measures. Hydrotherapy is often of great value in restoring compensation by improving the surface circulation. The capillaries of the skin will contain from one-half to two-thirds of the entire blood; this would lighten the load of a fagging heart immensely. Warm baths are generally to be preferred to either hot or cold baths. Massage, first gentle, later more vigorous, provided there is no arteriosclerosis, is of benefit to keep

the muscles in good condition during the enforced rest. In short, his return to normal exercise must be very gradual.

Osborne puts medication in fifth place and undoubtedly that is the place for it. With quiet, rest in bed, with proper diet, proper elimination and physical measures wonders will be accomplished. Nature is a wonderful doctor in patching up a broken compensation when given a full hand. If it is a stenosis the pulse will be slow, perhaps 65, and it should be. Prolonged systole permits more blood to pass through a contracted opening. It is a regurgitation, the pulse is fast, perhaps 85 and it should be. This prevents regurgitation. We should hesitate and study our cases thoroughly before we attempt to make a fast heart go slow or a slow heart go fast or even to increase the force of a weak heart; we should attempt, rather, to lighten its load otherwise we may do harm by causing acute dilation.

There is no drug that can take the place of digitalis in loss of compensation in chronic valvular disease. It acts specifically for good, and has its greatest success in lesions that cause enlargement of the ventricles. It has but little action on the auricles. It is simply a matter of stimulating a muscle. The heart muscle is somewhat similar to other muscles, when we attempt improvement in any muscle of the body, we stimulate it moderately at first, and are careful not to over work it; the object then is to train the heart muscle. For this reason large doses of digitalis should not be given to over stimulate suddenly an over worked and weak heart. While in auricular fibrillation it should be rapidly pushed to the full extent and then dropped for a time, careful experience shows that this method is not well tolerated in decompensation, and sometimes does positive harm and hastens death. A pneumonia patient of mine with broken compensation was doing fairly well on the seventh day. He had been receiving seven drops of Tr. digitalis every six hours for three or four days, while he had slight cyanosis with some dyspnea, his heart was carrying the load fairly well. He was given a teaspoonful of Tr. digitalis by another doctor, and died in a few hours with acute dilation. The dose of digitalis in decompensation to begin with should not exceed one grain of the assayed leaves three times a day, or five drops of the tincture repeated every eight hours. It

is generally advisable, in two or three days to increase this to ten drops once in twelve hours and then gradually increase until enough is given to produce results, then the dose should be brought down to what seems sufficient, administered once in twelve hours. Its greatest action develops a number of hours after it has been taken, then the action lasts for many hours. This frequency, once in twelve hours, is always sufficient; digitalis is not an emergency drug.

In aortic stenosis digitalis is not always indicated. The pulse in this lesion is usually slow. Alcohol in small doses, especially if the patient is old, is a good treatment. Nitroglycerine will do good work in these cases; it is well for them to have a nitroglycerine tablet always at hand.

In aortic insufficiency, if digitalis is used, it must be in small doses and guarded. The pulse must not be slowed below 80.

In mitral stenosis digitalis is of the greatest value, by slowing the heart and allowing the left ventricle to be more completely filled with the blood coming through the narrowed mitral opening during the diastole. It is also equally beneficial in mitral insufficiency.

The indications for teaspoonful doses of Tr. Digitalis may be many. I would rather believe there are very few. I am reasonably sure that broken compensation in chronic valvular disease is not one of them. That it should not be the initial dose in any disease. That not all of us are qualified in using it in this dosage. Before using it at all we should be thoroughly familiar with the signs of over action or undesired behavior of this drug. To err on the side of safety would be the better plan, to use it in gradually increasing dose would give us a better chance to watch its effect.

Caffeine should not be given or allowed to patients who have valvular lesions with perfect compensation, a cup of strong coffee represents about three grains of caffeine, nor should strychnine. Both of these drugs are valuable cardiac tonics when indicated and properly used. The cardiac stimulants are camphor, alcohol, and ammonia, of which camphor is perhaps the best. Camphor water internally or camphor in oil hypodermatically. Vasodilators, nitrates, iodides, and thyroid extracts of which perhaps nitroglycerine is the best, indicated in high blood pressure and

arteriosclerosis, associated with aortic stenosis. The blood pressure in this lesion, however, must remain reasonably high to assure a good blood supply at the base of the brain. Cardiac nutritives, iron and calcium. Iron is usually indicated and is a safe drug to give while studying our cases and giving nature a chance to repair the defects.

G. W. Norris states that with the exception of an occasional sudden death and of deaths from emboli or from ventricular fibrillation, "death from heart disease is a slow and torturing process." He found that mitral regurgitation offers the best prognosis. Aortic stenosis second, aortic insufficiency third, mitral stenosis fourth, or the worst prognosis. He found that an increase 35 mm. of blood pressure doubles, and an increase of 50 mm. quadruples the death rate. While abnormally low pressure, on the other hand, favors longevity, unless the fall occurs after a previous high pressure.

Discussion: T. H. MCCARLEY, M.D., McAlester.

The essayist has presented this immense subject in a remarkably complete way in one comparatively short paper.

At the outset he has very properly insisted that the best of the cure is prevention of those infections responsible for endocarditis. The point he makes about careful consideration of the heart in routine school examinations is well taken. A broader concept of prevention of heart disease was recently expressed by McLean, who said, "Let us learn the lesson taught by the tuberculosis campaign, that we have lessened the fields on which they could grow." This, of course, implies the fullest application of all public health measures as well as parental diligence under the painstaking advice of the family doctor.

Dr. Rice's analysis of the symptomatology of valvular heart lesions is such that it may profitably be used by the clinician in every-day practice. I think it is well to stress this, that in estimating heart power, the findings with the stethoscope should not receive so much consideration as response to physical exercise and slight evidences of failing compensation.

The arrangement in order of their importance of the measures in treatment: viz: hygiene, diet, elimination, physical measures and drugs is excellent. Perhaps

none of us would care to vary it or to add much to the requirements specified, unless it be in the matter of medication. Digitalis is to me the most interesting drug in the pharmacopoea and I know all too little about its pharmacodynamics. I am sure of this, that digitalis is indicated in auricular fibrillation and that when given in full dosage in this condition, the effect is, as McKenzie says, "almost dramatic." The same authority states that, "The best effect of digitalis is seen in cases of heart failure with dilatation of the heart and dropsy. Eighty or ninety per cent of such cases suffer from auricular fibrillation and the heart failure is often induced by the rapid rate that occurs with the onset of auricular fibrillation. To adopt a rational treatment in cases of rapid heart, it is necessary to find out the nature of the exciting stimulus and direct attention to that, and not unintelligently prescribe digitalis because it slows the heart in certain peculiar states." I have been unable to convince myself that digitalis has any effect on that somewhat mysterious function of the heart muscle, tone, nor that small doses, such as a few drops of the tincture, have any effect whatever on the heart.

—o— VALUE OF SUGAR LIMITED.

The present day tendency is to use sugar with too many kinds of food, according to Jessie Cole, nutritionist of the New York State Department of Health. A legitimate use for sugar is to make palatable foods that would not otherwise be so and to provide a ready form of energy. The value of sugar is limited to the single nutritive function of supplying the body with fuel; it cannot repair or build tissue, it cannot furnish vitamins or minerals or bulk.

Other foods, such as starches and fats, and the forms of sugar in milk, corn and honey are also fuel foods, and most of them contain other useful food substances besides sugar. One should not mask the natural mild flavor of cereals and fruits by covering them with large quantities of sugar, thinks Miss Cole. Sugar blunts the appetite, and that is why the right place for sweets is at the end of the meal.

The effect of strong solutions of sugar on the mucous lining of the digestive tract can be understood if one recalls the drawn feeling in the mouth after holding a piece of hard candy against the cheek for some time. This is due to the water absorbing power of sugar and such an irritation, if continued, is detrimental to the stomach and intestines.

A normal person can handle from three to four ounces of sugar a day without any ill effects, according to results of experiments carried on by the U. S. Department of Agriculture. Only athletes and others doing hard muscular work can assimilate more of it.

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EDITORIAL

THE CONQUEST OF CANCER

A rarely occurring idea on the study of
cancer is to be given practical execution
under the terms of a proposed award of
two prizes of fifty thousand dollars each,
offered by Mr. Wm. Lawrence Saunders,
New York, prominent business man of
that city. In a communication to the
American Society for the Control of Can-
cer Mr. Saunders states: "Discoveries are
not always made by experts. Physicians,

like business men, are not always the best
research workers. Through the lure of a
reward this serious problem might be
solved through the genius of a lay mind,
by chemists or through unknown and un-
organized medical sources. Yellow fever,
for instance, has been destroyed through
the research work of three obscure army
surgeons—Reed, Lazier and Carroll. As
far as I know, no cure for yellow fever has
been found, nor is a cure necessary so long
as we know how to control and prevent the
disease."

Any award made under the terms of the
offer will be made upon decision of the
American Society for Control of Cancer
the A.M.A. and American College of Sur-
geons.

THE AMERICAN COLLEGE OF PHYSICIANS

Dr. Lea A. Riely, Oklahoma City, an-
nounces that the American College of
Physicians will hold its Eleventh Annual
Clinical Session at Cleveland, Ohio, Febru-
ary, 21-25, 1927. The program will be of
unusual interest to internists (including
Neurologists, Pediatricists, Roentgenolo-
gists, Pathologists, Dermatologists and
others engaged in the field of internal
medicine). Cleveland hospitals and West-
ern Reserve University will cooperate in
presentation of a program. These pro-
grams constitute each year a post-gradu-
ate week on Internal Medicine of outstand-
ing merit.

The mornings will be given over to
clinics, afternoons to papers and the even-
ings to formal addresses by distinguished
guests, American or foreign. The meet-
ings of the American College of Physicians
in scope is National, with a large interna-
tional attendance. Some of the brightest
minds in the medical profession of the
World usually are present. Membership is
limited to those engaged in the field of In-
ternal Medicine.

An invitation is extended to all Okla-
homa physicians who may be able to do so
to attend this meeting. The standards of
organization are high, many men of dis-
tinction in the American profession are
numbered among its members, and the
meeting will prove, as all others held here-
tofore, of great importance to those at-
tending.

Editorial Notes—Personal and General

DR. and MRS. J. G. SHOUN, Fairfax, have returned from a visit to Colorado.

DR. J. R. REID, Hobart, after completion of several weeks post-graduate work in New York, announces his removal to Altus.

DRS. R. E. LEATHEROCK, Shamrock, and ORANGE STARR, Drumright, were elected President and Secretary, respectively, of the Creek County Medical Society recently at Bristow.

CARTER COUNTY MEDICAL SOCIETY elected as officers for 1927, President, Dr. R. C. Sullivan; Vice-President, Dr. Walter Johnson; Secretary, Dr. A. G. Cowles; Delegates, Drs. F. W. Boardway and J. C. Best, Ardmore.

STEPHENS COUNTY MEDICAL SOCIETY elected for 1927: President, Dr. S. H. Williamson; Vice-President, Dr. A. M. McMahan; Secretary-Treasurer, Dr. B. H. Burnett; Delegates, Drs. A. J. Weedn, L. M. Overton and C. P. Chumley, Duncan.

DR. and MRS. CHAS. R. HUME, Anadarko, celebrated the fiftieth anniversary of their marriage, Monday evening, December 27th, at the First Presbyterian Church, Anadarko. The JOURNAL congratulates our past-President and Mrs. Hume upon the culmination of their long and happy union.

PITTSBURG COUNTY MEDICAL SOCIETY held its annual banquet at McAlester January 7th. Dr. W. G. Ramsey was toastmaster, while Dr. O. W. Rice narrated the accomplishments of the society for the past year. Colonel W. S. Key, McAlester, addressed the diners, and Dr. J. S. Fulton, Atoka, president-elect of the State Medical Association, was the guest of honor.

DRS. GAYFREE ELLISON and L. A. TURLEY Norman, of the Bacteriological and Pathological Departments, State University, will, with this issue, present abstracts of articles of especial interest to the Oklahoma physician. It will be noted that their offerings are extremely practical and useful to the general practitioner as well as specialist, and will prove of help to the readers of the JOURNAL.

OTTAWA COUNTY MEDICAL SOCIETY held its annual meeting at Miami December 15th, calling it a "Game Banquet," "the time at which all differences are buried and a new and clean sheet is turned over for the new year. A mortatorium, as it were, for all the misunderstandings of the past." The program was spicily and scientifically arranged by blending everything good obtainable in the way of seasonable game to listening to papers by Drs. Richard L. Sutton, Kansas City, Will W. Jackson, Sarasota, Florida, and Felix M. Adams, Vinita. The program is really one of the rare gems coming to the editor's desk. County secretaries seeking stimulation of ideas for something good may apply to the secretary, Dr. General Pinnell, Miami.

DR. J. W. FRANCISCO, Enid, spent several weeks recently in Chicago in post-graduate work.

DR. JAS. T. RILEY, El Reno, has returned from St. Louis where he had been doing special work in cardio-renal diseases.

GARFIELD COUNTY elected Dr. F. A. Hudson, President; Dr. S. N. Mayberry, Vice-President, and Dr. Paul Champlin, Secretary-Treasurer, all of Enid, as officers for the ensuing year.

HUGHES COUNTY elected President, Dr. W. L. Taylor, Gertie; Vice-President, Dr. S. H. Hamilton, Non; Secretary, Dr. D. Y. McCary, Holdenville.

OSAGE COUNTY elected: President, Dr. B. F. Sullivan, Barnsdall; Vice-President, Dr. O. R. Gregg; Secretary-Treasurer, Dr. R. J. Barritt, Pawhuska, and Delegates, Dr. D. Worten, Pawhuska, and Dr. T. J. Colley, Hominy; Censor, Dr. W. H. Aaron, Pawhuska.

OKLAHOMA COUNTY MEDICAL SOCIETY elected officers for the ensuing year as follows: President, Dr. E. S. Ferguson; Vice-President, Dr. H. H. Cloudman; Secretary, Dr. R. L. Murdock, re-elected; Censors, Drs. LeRoy Long, R. M. Howard and A. B. Chase; Library Board, Drs. C. M. Pounders, Ralph Myers and Walter Dersch, Oklahoma City.

DOCTOR CHARLES L. REEDER.

Dr. C. L. Reeder, Tulsa, died in a St. Louis Hospital, Monday, December 20th. Dr. Reeder had not been well for some time, but became acutely ill only a short time before death, and while in St. Louis. Born in 1862, after receiving his preliminary education he entered Barnes Medical College, from which he graduated; located in Tulsa in 1890. Throughout a very busy life he was identified with Tulsa as a civic leader, joining in the establishment of the first hospital in Tulsa in 1906. He was Mayor of Tulsa in 1904, during a period of great expansion and growth of the city. Ever evincing a close interest in Masonic affairs, he attained the 33rd degree, was Grand Master of the State in 1914, and was a member of the Supreme Council. For twelve years he was health officer of Tulsa county, and was an ex-president of the State Medical Association.

He is survived by his widow and a daughter, Mrs. E. C. Jackson of Denver.

After impressive ceremonies conducted by Reverend C. W. West, First Presbyterian Church, interment was had under Masonic auspices in Rose Hill Cemetery. Among the pall bearers were physicians who knew him best over many years of active work, were Drs. Fred S. Clinton, J. C. W. Bland, S. C. Kennedy, C. Z. Wiley, S. DeZell Hawley.

Tulsa and Oklahoma loses one of its best citizens and finest characters in the passing of Dr. Reeder.

DR. W. M. YEARGAN, Soper, has moved to Hollis.

DR. C. M. PRATT, for many years a practitioner of Lindsay, has moved to San Antonio, Texas.

COMANCHE COUNTY MEDICAL SOCIETY elected: President, Dr. L. T. Gooch; Vice-President, Dr. E. B. Mitchell; Secretary-Treasurer, Dr. G. S. Barber, and Censor, Dr. J. W. Mason, all of Lawton, for the ensuing year.

TULSA COUNTY MEDICAL SOCIETY recently installed Dr. Geo. R. Osborn as President, electing Dr. W. K. Trainor as President-elect for 1928. Others elected are: Vice-President, Dr. H. W. Ford; Secretary-Treasurer (re-elected) Dr. R. Q. Atchley; Censor, Dr. Chas. H. Haralson; Delegates, Drs. W. Albert Cook, I. N. Tucker, V. K. Allen, J. W. Childs, Ralph McGill, Paul N. Atkins and Fred Y. Cronk, all of Tulsa.

RADIO-MEDICAL papers will be on the "Air" beginning January 6th, according to the plans of the University of Arkansas radiophone station KUOA. Every Tuesday evening at eight o'clock papers will be delivered by various nationally known authorities, among whom are Dr. George Dock, Pasadena; Drs. Wm. J. Mayo, F. M. Pottinger, Monrovia, Nathaniel Allison, Harvard, and W. McKim Marriott, dean of Washington University Medical School.

DR. WANN LANGSTON, Oklahoma City, has been appointed as Superintendent of the University Hospital, effective January 16th. Dr. Langston has been connected with the University for many years, a short time since completing an extended course of study abroad. This is strictly a "Home Product" appointment, as Dr. Langston graduated from the University ten years ago, and has been actively and closely associated with it ever since. Those who know him will appreciate that the University could hardly have secured a more highly fitted man for the position.

THE STATE BOARD OF MEDICAL EXAMINERS, Annual Report for the last Biennium has just been issued by Secretary, Dr. J. M. Byrum, Shawnee. The report shows that licenses were granted as follows: By examination, recognized graduates, 99; by reciprocity from other states, 60; by re-registration of Territorial licenses, 10; by duplication of lost or destroyed licenses, 5; a total of 174. During the same period 84 have been endorsed for reciprocity to other states. Dr. Byrum expresses the opinion that there has been no net gain in the number of physicians practicing in the State. The report also indicates that the legal status of the Board is still in Statu Quo.

PHYSICIAN, GRADUATES, Medical Department, Oklahoma University, according to Dr. L. A. Turley, Assistant Dean, Norman, have an average monthly income of \$1100. Prof. Turley has compiled figures from information received from a majority of 304 graduates turned out by the School of Medicine. The incomes, it is said, run from three hundred to as high as four thousand dollars monthly. While most of them are practicing in Oklahoma, 22 States are represented

DOCTOR AUSTIN I. BROWN.

Dr. A. I. Brown, Oklahoma City, died at his home in that city December 29th. Funeral services and interment were held December 30th. Dr. Brown was born in 1868, graduating from what is now a part of the the Medical Department, St. Louis University, in 1897. He located in Oklahoma City about five years ago, affiliating with the Oklahoma County and State Medical Associations. He is survived by his widow, two daughters and a son.

in the various locations, as well as Mexico and Canada, the U. S. Army and foreign missionary service. A very fine showing, but we wonder how much is derived from actual practice, fortunate "oil" investments, and how the Federal Income Tax Returns are ever met.

—o—

EYE, EAR, NOSE and THROAT

Edited by Jas. C. Braswell, M. D.
726 Mayo Bldg., Tulsa

The Influence of Protein Therapy on the Experimental Staphylococcal Infection of the Rabbit's Cornea., Key, B. W.: Am. J. Ophth., 1926, 3 s. ix, 351.

Key states that the best form of foreign protein available for administration to man is antiphtheria serum. The dosage of other preparations such as milk, normal horse serum, aolan, etc., and the reaction produced by them are uncertain. The dosage of the serum is more definite and its anaphylactic effects are better understood.

A concentrated serum is less likely to cause serum sickness than whole serum because a smaller quantity of the former is injected. The history of previous anaphylactic conditions such as diphtheria, status lymphaticus, asthma, or hay-

DOCTOR ROBERT ARMSTED MUNN.

Dr. Robert A. Munn, McAlester, died in Ocala, Fla., December 10th, at the home of his daughter. Dr. Munn had been slowly failing for some time and went to Florida seeking improvement. Death was due to cardio-renal disease.

Born in Jackson, Tenn., January 15, 1852, his preliminary education was obtained in the common schools, after which he entered Vanderbilt University, for a time, practicing medicine from 1880 to 1890, graduating from Vanderbilt that year. He located in Western Oklahoma in 1903, moving to McAlester in 1904. Dr. Munn took an active part in the building of McAlester and always participated in the work of organized medicine, being a member of Benton County, Arkansas, Arkansas Central and Indian Territory Medical Associations at various times.

fever-like attacks in persons proved susceptible in a stable and horse environment are well established as probable contra-indications to serum injections.

Key has not observed serious anaphylactic effects in any of the 170 treated to date. The doses have varied from 1,000 to 5,000 units.

In the first six experiments performed by the author with regard to the influence of protein therapy on staphylococcal infection of the rabbit's cornea an unmeasured dose of staphylococci was used for the inoculation, but because of the very violent corneal reaction produced by the too-concentrated emulsion of the micro-organism, nothing as to dosage or differences in effect could be determined.

In the next thirteen experiments it was recognized that if the minimal dilution of staphylococci producing active ulceration of the cornea could be determined, more accurate observations would be possible. The determination of the virulence of the staphylococci for the corneal substance was attempted by first growing the micro-organism in the eye of an animal. However, this calculation was upset by the varying virulence of the different strains of staphylococci isolated from different parts of the body.

In the last seven experiments a more accurate method of determining the virulence of the bacteria was devised, the strains used being passed through the eye of three successive animals.

From his experiments, Key draws the following conclusions:

1. Such an investigation as this is dependent for its accuracy primarily upon the method of inoculation, the determination of a fixed virus through "passage," and the suitable dilution of this virus.

2. The method of injection, the size of the dose and the relative value of different forms of protein should be worked out with some degree of certainty from the outline of procedure finally demonstrated in these experiments.

3. These experiments demonstrated that very interesting and important questions of virulence of different strains of staphylococci for corneal substance, as evidenced by the unmistakably greater virulence of the staphylococci cultivated from the eye as compared with those cultivated from the throat. Whether this is entirely a specific effect or a mere variation in ordinary virulence remains to be proved.

4. In almost every experiment in which any difference could be noted, the animal which received the protein injection showed the least corneal reaction to the infecting micro-organism. However, none of the experiments showed any important difference between the effect upon the infection of antidiphtheria serum, concentrated horse serum, and typhoid vaccine. Sterile milk, which was tried in twelve rabbits, showed no effect whatever, the corneal lesion being similar in every way to the corneal lesion in the control animals.

Haemorrhagic Types of Ear Disease Occurring During Epidemics of Influenza., Milligan, Sir W.: *Proc. Roy. Soc. Med., Lond.*, 1926, xix, Sect. Otol., 21.

The toxæmia produced by the influenza bacillus in the blood induces a marked vasomotor paresis, upsets the balance of the heat center, and, as a

rule, produces intense congestion and a high temperature.

The author believes that the very severe headache is the result of an acute and rapid congestion of the pia arachnoid membranes with a concomitant increase in the cerebrospinal fluid and a consequent rise in the intracranial pressure. Lumbar puncture gives prompt relief from the headache and relieves the varying degrees of serious meningitis. It also materially checks the aberrations of the heat center since nothing predisposes more to high temperature than sudden and fluctuating increases in the intracranial tension.

In the external auditory meatus the occurrence of an otitis haemorrhage is pathognomonic. In no other condition do we find the peculiar blood-charged bullae present in influenza. These bullae are usually situated on the postero-inferior meatal wall, close to the annulus tympanicus, or on the surface of the membrana tympani itself.

In true otitis media haemorrhagica the drum-head is oedematous and fiery red, occasionally shows bullae of a dark bluish color on its posterior segment, and at times pulsates as a whole. The condition is invariably associated with intense suffering. The congestion is much more acute and painful than that present in the usual types of middle-ear catarrh, and its destructive effects, so far as the contents of the middle ear are concerned, are much more serious.

Extension to the mastoid antrum is quite common. With the exception of diabetic mastoiditis, there is no inflammatory affection which produces such rapid destruction of bone as influenzal mastoiditis.

The author is convinced that in many of these cases with objective signs of severe congestion there is at the same time an evanescent pia-arachnitis. He urges removal of the focus of infection and lumbar puncture. The operation of choice is the Schwartze operation.

Nerve deafness may often be attributed definitely and specifically to an attack of influenza. The pathology present is undoubtedly a haemorrhagic effusion into the cochlea with resulting destruction of certain portions of the end-organ and toxic infection of the auditory nerve itself.

It is of the utmost importance to recognize the symptoms of an early serosanguinous influenzal labyrinthitis in order to treat it vigorously by local depletion, lumbar puncture, and the repeated subcutaneous injection of pilocarpine, in order to promote absorption and thus relieve the increased intralabyrinthine tension so conducive to the passage of toxins through the point of least resistance of the auditory tract.

The Radical Cure of Peritonsillar Abscess, Baum, H. L.: *Ann. Otol., Rhinol. & Laryngol.*, 1926, xxxv, 429.

The treatment of peritonsillar abscess is disappointing, especially in the early stage. Because of the intense suffering and the danger of serious and often fatal complications, it is exceedingly desirable to give relief as early as possible rather than to wait until incision and evacuation are considered feasible.

The author has obtained most satisfactory results from tonsillectomy. In what he calls the second stage of the condition, the gland is pushed toward the midline, but as yet there is no supratonsillar bulging. As the ordinary method of

approach will not evacuate the pus at this time, tonsillectomy is most applicable. Baum performs it under ether anaesthesia and removes the normal tonsil at the same time.

This method evacuates the pus and provides massive drainage of the infected area with immediate relief.

Six Cases of Definite Mastoiditis in Which the Middle Ear Was Definitely Not Affected. Hea.stead, B. E.: *Ann. Otol., Rhinol. & Laryngol.*, 1926, xxxv, 517.

Cases of mastoiditis without apparent involvement of the middle ear are rare as compared with cases in which the middle ear is obviously affected.

Infection in cases of mastoiditis usually comes from the nasopharynx by way of the eustachian tube. If the aditus ad antrum is small, infected material will soon be sealed off, no means of drainage being left for the infected cells whereas the infected material in the middle ear may drain through the eustachian tube. Mastoiditis without apparent involvement of the middle ear should not be confused with latent otitis media; in the latter there is deafness and sometimes pain, but no spontaneous discharge of pus. However, paracentesis is always followed by a discharge of pus.

Apparently fifty-eight cases of mastoiditis without evident involvement of the middle ear have been reported in the literature, but the descriptions are brief and the date therefore uncertain and inconclusive. The author reports six cases from the Mayo Clinic. While the study of these cases does not permit definite conclusions, it indicates the existence of an antecedent otitis media without symptoms. The roentgen-ray examination is important. Paracentesis is always negative. Predominance of the streptococcus mucosus is a danger sign in this type of infection, and when this organism is found in cases of acute otitis media with the drainage of pus, the otologist should be on guard.

ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M. D.
1717 North Robinson St., Oklahoma City

Spontaneous Dislocation of the Tendon of the Long Head of the Biceps Brachii: A. W. Meyer, M.D., Palos Alto, Calif., p. 109, July, 196.

After recording and "dissecting" the earlier reports of dislocation of the tendon of the long head of the biceps, the author mentions four instances of this condition that have come to his attention. These observations were made in the course of study of 86 cadavers, an incidence of 1.25 per cent. The frequency of these findings, post-mortem, would lead one to believe that it should be seen more frequently clinically. While there are no detailed descriptions or illustrations of the pathological changes in the dissected specimens, there is a discussion of the probable etiology. Meyer believes that the destruction of part of the articular capsule is a necessary antecedent to the dislocation which could then take place easily when the arm is fully abducted and externally rotated, particularly when the elbow is flexed and the forearm supinated.

Pinning the Fractured Ulnar Styloid Process in Colles' Fracture.—By Frank J. Hathaway, Brit. Med. J., 59, July 10, 1926.

The author, while admitting the successful treatment of Colles' fracture depends upon the accurate reduction of the radial fracture, maintains that in many cases the cause of pain and weakness in the wrist is due to the permanent separation of the ulnar styloid process. The internal lateral ligament of the wrist is attached to the styloid process. The operation consists of an open approximation of the fragments and their maintenance by means of a straight bayonet-shaped needle driven through the fragment into the lower end of the ulnar in a direction downward and slightly towards the flexor or radial side of the forearm. The arm in a Carr's splint for seven or ten days, after which it may be discarded, a firm bandage applied and massage and passive movements started.

Late Decompression of Lumbar Cord Following Injury.—By W. O. Stevenson, Can. Med. Ass. c. Journal., XVI, 563, May, 1926.

Male, 53, fell from ladder five years previously. Three months later returned to light work. Three years later he developed lumbar pain and had to use a cane to steady himself. A year after this, uncertainty in control of sphincters appeared; muscular weakness in lower limbs increased so that he was unable to walk steadily without the use of a cane.

On examination, asthenia, ataxia and atonia were shown in the lower limbs. The lower limbs presented a few areas of disturbed sensation to touch, heat and cold. There was no wasting. Muscular tone was poor. The gait resembled that of a drunken man. The reflexes were normal, save for some depression of the knee jerks. The rectal sphincter was very active. X-ray showed a wedge-shaped first lumbar vertebra, with absence of the intervertebra disc between it and the second. The Wasserman reaction was negative.

Operation—The laminae of the twelfth thoracic, first and second lumbar vertebra were removed. The dura perceptibly bulged when pressure was removed. It was not opened.

Six months later—The patient has regained complete sphincter control. He now walks quite steadily without a cane. The local pain has ceased and he is thinking of going to work.

Compound Dislocation of the Lower End of the Ulna.—By Corrigan and Corrigan, Can. Med. Assoc. Jour., XVI, 689, June, 1926.

The patient was injured by backfire while cranking his car. There occurred a long oblique fracture of the radius well above the extremity; 4 c.m. of the ulna protruded through the anterior aspect of the forearm, stripped clear of attachments and with the styloid process intact. The parts carried evidence of soiling with farmyard material. The force producing the injury was as follows: The engine having backfired, it continued to reverse, and the crank remaining connected, its hand-piece struck the arm on the posterior-radial aspect. The hand acting momentarily as a counter-weight, the radius was fractured and the ulna forced to an open dislocation.

Antitetanic serum was given and thorough cleaning done. The parts were easily restored

to normal position. Carrel-Dakin irrigation was carried out and passive movements begun early. The patient regained a functionally correct arm, wrist and hand.

CLASSIFICATION OF FOOT CONDITIONS

Recognition of various clinical forms of foot disabilities by differentiation of their distinguishing features is important in foot disabilities just as it is in other parts of the body. Each type is characterized by certain factors in the etiology and by definite groups of symptoms and physical findings; so that treatment must be specifically applied according to the clinical forms.

They must be classified as follows:

1. Weakness of foot structures as the result of constitutional disturbances.
2. Pronated feet with or without symptoms, as in childhood.
3. Mechanical weakness due to variation of anatomical structures.
4. Faulty shoes and habits.
5. Local pathological changes.
6. Injury.

UROLOGY and SYPHILOLOGY

Edited by Rex Bolend, B.S., M.D.
1010 Medical Arts Building, Oklahoma City.

PHARMACEUTICAL DETAIL MEN

In a large percentage of times the various detail men from pharmaceutical houses come to us with quite definite information concerning certain products and more and more the drug houses very carefully train their detail men to give to the doctors the exact scientific facts. It is not infrequent that we learn a great deal from these carefully trained men. So true is this, and so well is it recognized by the busy practitioner that too many, I am sorry to say, get most of their current information from detail men.

Occasionally along comes one who either does not understand his subject or is so over-zealous to get his products in use that he either unknowingly or purposely makes false statements which are very misleading to the doctor who may be easily led to some "short cut"; such a man was in my office recently extolling the virtues of a certain bismuth preparation and had I been foolish enough to follow his statement inestimable harm would have resulted to many patients.

So it behooves us to rely on our sound and fundamental training and not take the word of someone who may be selling a particular product before it has been thoroughly endorsed by the Medical Profession. Many times they will quote a long list of foreign investigators but if their literature is carefully read it will be noted that there are numerous discrepancies in the actual reports and in the information given.

CLIPPINGS FROM THE UROLOGIC AND CUTANEOUS REVIEW.

Do not expect to cure an alkaline cystitis with irrigations and hexamethylenamine until you have made the urine acid in reaction.

In connection with the correction of the obstructing cause of hydronephrosis, it is well to

reduce the size of the pelvic sac by excising a portion of its wall.

It is always best in operating for the removal of a stone in the ureter, to open the ureter at a point above the stone, so that the incision will be in healthy tissue.

In most instances a syphilitic dactylitis will have its origin in the bone or periosteum, and only rarely does the process start in the adjacent soft parts, with later involvement of the bony structure. The pain of these syphilitic bone inflammations is not marked.

In all vesical disturbances of women ascertain the position of the uterus. Remember that retroversion, for instance, causes traction on the vesicouterine connection with dragging of the neck of the bladder, productive of irritability. Of necessity, treatment directed solely to the bladder will not give much relief.

Unaccountable urinary frequency throughout the twenty-four hours, particularly in young persons, should turn one's suspicions toward tuberculosis, and an exact bacteriological examination be made at once. If the first is negative, another should be made later and guinea-pig inoculation practiced.

The degree of urinary difficulty due to prostatic obstruction does not of necessity bear a fixed relation to the size of the gland as felt per rectum. Thus, a small prostate per rectum may cause great obstruction to the stream. A small fibrous gland oftentimes gives much more trouble than a large adenomatous gland.

In chronic distention of the bladder with a history extending back over a long period, be careful in complete retention not to empty the viscus completely. Best to tie in a catheter and take seventy-two hours to evacuate completely. Many an unexpected and unexplained death has followed quick and complete emptying of the bladder.

SARCOMA OF THE PROSTATE

Smith and Togerson, in Surgery, Gynecology and Obstetrics, state that according to some writers sarcoma of the prostate presents two different clinical pictures, depending upon whether it occurs in a child or in an adult. Putzu in commenting upon this says that the distinction is artificial and scholastic. Whatever difference prevails is due to the rapidity and extent of the growth.

At all ages the onset is insidious. The first symptoms are almost without exception related either to the rectum or the bladder and present themselves as a partial bowel obstruction, or by difficulty in urination or sudden complete retention.

THE IMPORTANCE OF UROLOGIC DIAGNOSIS IN INTERNAL MEDICINE

In the American Journal of Medical Sciences, Beck and Goldstein state that patients suffering with urogenital diseases who apply for treatment at a medical clinic are frequently not diagnosed as such. They advise that a systematic routine

should be adopted by physicians for the investigation of chronic diseases which should include a microscopic examination of the urine. Reflex disturbance from the kidneys, ureters, bladder frequently leads to error in diagnosis. Gross anatomic lesions of the kidneys and ureters may exist without giving rise to any functional disturbance of the bladder or any pathologic findings in the urine. A certain group of chronic medical cases in which all treatment had failed resulted either in absolute cure or definite improvement in 66 per cent after treatment was established on a urologic diagnosis.

Every physician should have impressed upon him the following dictum; every venereal sore should be regarded as syphilitic until it is proved otherwise. Indeed, this appropriately applies to extragenital sores, particularly on the lip, that do not readily heal.

SURGICAL ASPECT OF PYURIA IN CHILDHOOD

When medical treatment is unavailing and focal infection has been ruled out, persistent or recurrent pyuria, in Mixer's opinion, demands urologic investigation. Cystoscopic examination with ureteral catheterization can be performed in childhood and usually in infancy without undue risk. Faulty innervation, tuberculosis, calculus and urinary stasis are underlying causes of chronic pyuria. Stasis may be the result of intrinsic lesions of the urinary tract or may be produced by pressure on the tract from without. Such lesions are usually of congenital origin. Obstruction to the urinary outflow is most frequently encountered at the ureter-pelvic junction, the vesical insertion of the ureter, or in the deep urethra. Medical treatment and local measures will fail to eradicate the infection in the presence of urinary stasis. To prevent renal destruction, surgical means should remove the obstruction and eliminate stasis.

SYPHILIS AND ACUTE YELLOW ATROPHY OF THE LIVER

U. & C. Rev.—Nov., 1926.

In the "Archiv Fur Dermatologie und Syphilis," Neddermeyer describes eight fatal cases of acute yellow atrophy of the liver, with simultaneous syphilis in six cases. The diagnosis was based on clinical data. He indicates that the atrophy of the liver did not depend upon acute poisoning due to arsphenamine treatment. The explanation is a specific toxic effect of the syphilitic infection on the liver cells, without a direct action of the spirochetes.

RESULTS WITH TRYPARASAMIDE TREATMENT OF NEUROSYPHILIS

U. & C. Rev.—Nov., 1926

In the Journal of "Nervous and Mental Disease," Neymann and Singleton state that they have treated fifty cases of the central nervous system with tryparsamide. About 50 per cent improved or recovered. Parenchymatous syphilis of the central nervous system responded to tryparsamide therapy more favorably than the mesoblastic type.

BACTERIOLOGY, PATHOLOGY and PUBLIC HEALTH

Edited by Drs. L. A. Turley and Gayf Ellison, Norman, Oklahoma

The Present Status of Prophylactic Rabies. Vaccination in Dogs.—Eichhorn, A., *American Journal of Public Health*, 16:644-647, June, 1926.

Rabies appears to have become more widespread in the United States, with more endemic centers over a wide area.

All domestic animals as cattle, horses, sheep, goats, dogs and cats may be affected, but the disease occurs more frequently in dogs, and they are most commonly responsible for the transmission of the disease to men. The prevention of rabies in man therefore resolves itself into the successful elimination of the disease in dogs.

The muzzling of dogs is not effective because owners of dogs will not muzzle them constantly.

The newer method of prophylactic vaccination of all dogs has been adopted and proven of great value.

The effectiveness of vaccination has been proven in Japan. Of 104,629 dogs vaccinated only 41 developed rabies, and of these a large per cent had been exposed to rabies before vaccination. Of the unvaccinated group representing about 35,000 dogs, 1699 developed rabies. During the past three years more than half a million dogs have been vaccinated in the United States. The vaccination is simple, inexpensive and should be popularized.

The prophylactic vaccination of dogs consists of one injection of phenolized fixed virus and confers immunity for one year, and should be repeated each year.

The vaccine is made as follows:

The brain and spinal cord of a rabbit which developed rabies on the seventh day after injection of a fixed virus is ground up and mixed with four times its volume of a 60 per cent glycerine containing 1.5 per cent phenol. The mixture is placed in the incubator three days. Each cubic centimeter contains two tenths (.2) grams of brain emulsion. The prophylactic dose is five cubic centimeters or one gram of phenolized brain emulsion.

The vaccination is without danger to the animal, and if properly used rarely causes a local abscess.

Education of the value of this measure as a preventative for rabies, and compulsory vaccination of all dogs would prevent rabies in man and eventually eradicate rabies among domestic animals.

A Study of the Laboratory Aids to the Diagnosis of Chronic Gonorrhea in Women.—Raymon S. Patterson, *Journal Immunology*; Vol. xii, No. 4, Page 293-308, October, 1926.

In acute gonococcus infections the clinical diagnosis usually may be confirmed by microscopic examination of the stained smear, but in chronic gonorrhea no single laboratory test can be relied upon to confirm the clinical diagnosis.

The available laboratory aids in the diagnosis are strained smears, cultures and complement fixation tests.

The purpose of this paper is essentially to confirm the conclusion that the complement fixation test is the most valuable of the three methods.

Many states require a report of cases of gonorrhea, and that the source of the infection, if known, should be reported.

In investigating reported sources of infection, and especially where quarantine is established, it is important to confirm the clinical diagnosis.

The usual procedure in practice is a local examination and preparation of smears of the cervical and urethral exudate, and if these smears prove negative, release from quarantine. As chronic gonococcus infection is difficult to detect in this manner, many carriers are released.

Thompson, in the Oxford Medical Publications, 1923, has the following to say in regard to the smear method in chronic gonorrhea.

"It is extremely difficult to diagnose gonorrhea in the female by smear method examinations, whether the sample be taken from the urethra, vagina, or crevix. The majority of such smears show myriads of organisms, diplococci, diplobacilli, (Gram-positive or Gram-negative), and only a bold and inexperienced observer would dare to diagnose the presence of isolated gonococci in such a mass of bacteria. The diagnosis is only certain where numbers of gonococci are found intracellularly. These may be found in the early acute cases, but it is rare to find such a picture in chronic female cases. In the majority of chronic female discharges the author has found the smears negative to gonorrhea or doubtful."

This statement by Thompson was confirmed by the author in that less than one-fifth of the cases of chronic (clinical) gonorrhea showed positive or doubtful smears.

A study was made of the cultural methods. While the cultural method proved of some value in detecting a few cases of chronic gonorrhea, when the smear method failed, the laboratory procedure was so technical and difficult that there was no advantage.

Torrey, Wilson and Buckell report fifty per cent positive in sub-acute cases and twelve per cent positive in chronic cases by culture method.

The complement fixation test of blood of suspected cases of chronic gonorrhea gives a much higher proportion of positive findings than either smear or cultural methods. The method used was one by McNeil:

1. The antigen consists of three strains of gonococcus (Torrey) grown on acetic agar forty-eight hours. Remove growth. It is extracted in alcohol or ether, dried and ground up into a fine powder. The powder is suspended in saline solution one gram to 200 cc. of saline heated to 80 degrees c. for one hour.

2. Immune serum for positive control. A rabbit is given a series of intravenous injections of commercial gonococcus vaccine at five day intervals, the dose being 0.5 cc., 1 cc. and 1 cc. One week after the last injection the rabbit is bled from the heart, and the clear serum collected and inactivated at 56 degrees c. for thirty minutes on three successive days.

Complement: Fresh serum from several guinea pigs collected separately. Some difficulty was met here as it was found that the serum from a large proportions of the pig was anti-complementary.

Memolytic System: Washed sheep blood corpuscles five per cent suspension plus hemolytic amboceptor obtained from rabbits immunized against sheep cells.

Careful trituration of the different substances is necessary to establish the working unit.

Routine tests were made on one hundred eighty-four women admitted to the New Jersey State Reformatory for Women. Of these cases eighty-three were clinically positive at the time the test was performed. Of these, sixty-three per cent gave positive tests; twenty-two per cent doubtful and fifteen per cent negative tests.

The practical difficulties in the complement fixation test may be summed up as follows:

1. Negative test does not exclude gonococcus infection as fifteen per cent of the known clinical cases were negative.

2. A positive test does not necessarily indicate that the person is a carrier, as the blood shows only that the person has or has not had gonococcus infection, and that anti-bodies are present.

3. The technical difficulties, and the personal equation in deciding negative and positive when the test is not clear cut.

Another method of complement fixation using the pus discharge as the antigen, and a known gonococcus immune serum was attempted. The results were fairly satisfactory and the technique simplified over the blood complement fixation, with the following conclusions:

- A. The pus antigen complement fixation reaction does give positive results in cases of gonorrhea in which the pus is rich in gonococci.

- B. The reaction is specific, in that discharges from other infections did not give positive reactions; but,

- C. In many chronic cases the discharges do not contain sufficient antigen to cause the reaction to be strong enough to be read with certainty.

- D. The pus antigen complement fixation does not give as large a proportion of positive findings in sub-acute and chronic cases as does the blood complement fixation.

Studies in Septicemia.—Bean, H. C., Northwest Medicine, 25:306-310, June, 196.

A study of fifty-eight cases of blood stream infection with the coccus group or organisms.

Blood stream infection may carry the cocci to the various organs of the body, as liver, spleen, kidney, lymphatic glands, heart, and bone marrow, where they cause local suppuration, with symptoms, or they may lie dormant due to fibrous proliferation around the focus, later causing a remission of symptoms by again entering the blood stream.

The universal dissemination of the organisms throughout the body explains the insidious onset, the recurrent attacks, and the futility of therapy in septicemia.

The most common cocci found in these septicemias are staphylococcus streptococcus hemolytic and viridens.

It is important to observe blood cultures for forty-eight to seventy-two hours after culture is taken as latent growth is common. This is especially true of the non-hemolytic streptococci. The most common source of entrance of cocci into the blood is through the aural region, preceded

by acute or chronic otic media, or through the ethmoidal cells and the nasal passages. In three of the cases studied the entrance into the blood stream was from a small abrasion of the skin around the base of the nails of the fingers.

No cases were traced to intravenous medication, although this procedure has become quite universal.

Symptoms: Sudden onset, high temperature, chills and rigor either early or latent—rigors may not occur early. The chills occur when a new group of organism are given off by the foci into the blood stream. Nausea and vomiting of toxic origin are common, and should not be confused with gastric disturbance. Stiffness, tenderness around joints and suppuration of joints occur frequently, especially in staphylococcus infections. Petechial hemorrhages of the skin and the conjunctivae are evidences of the embolic processes so often seen in these infections. The most common location of petechiae are outer surfaces of the upper arm, under the finger nails, and along the costal margins of the upper abdomen. Splenic infarcts are well known. Splenitis was recognized in sixteen of the cases.

Renal infarcts occur, and may be recognized by careful examination of the urine for blood.

Rapidly progressive anaemia is an early symptom. The late symptoms were: emaciation, progressive anaemia, development of endocarditis purpuric spots on the skin, and marked hematuria.

The prognosis in all cases is extremely grave, and the mortality very high.

Therapy: Twelve cases of streptococcus hemolyticus and two cases of viridens were given three doses of a one per cent mercurochrome intravenously. One case recovered and one improved.

Three cases were given anti-streptococcus serum and one inactivated serum from blood of another patient with a similar disease. The mortality in this group was one hundred per cent.

Intravenous and oral administration of salicylates to the point of salicylism gave favorable results in ten cases.

There were four recoveries of fourteen given sodium coccodylate.

Blood transfusions were apparently of no value except in hemolytic streptococcus infections.

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In order to meet children easily, to get along with them and to do good work with them, one must have a knowledge of a few principles of child psychology, thinks Dr. Robert A. Black, writing in Hospital Progress. Real interest in children is of prime importance, and this interest will grow with a knowledge of some of their traits.

In the first place, babies are great stickers for etiquette, says Dr. Black. You cannot be familiar with a baby at the first meeting. He will howl with disapproval if you try. A little polite aloofness is the correct attitude to take in meeting a baby or small child. He wants to be ignored at first, so that he may have a chance to size you up, to see whether your choice and movements are kindly. If he likes you he will begin to make advances, smiling suddenly or putting out a finger. Much apparent shyness in children may be due simply to annoyance at forward grown-ups.

During the first two years of life the child is busy developing his special senses. By playing up to these one may please him and win his confidence. There is a time when the snapping of fingers or a whispered voice will attract attention. A little later a glittering object attracts him, and still later it may be a soothing lullaby.

After 2 years of age other phases enter in. There is the memory age when the child likes to repeat nursery rhymes. From 2 to 4 is the age of the imagination. If you can listen understand-

ingly when a child tells you fairy tales that he makes up, you will be appreciated and loved.

From about 6 to 8 years comes the age of curiosity. Not only does the child ask questions about every conceivable thing, but he tries everything. It is his way of gaining knowledge about the world he lives in. He expects his questions to be answered in good faith, and he cannot know that he should not do certain things. Even if he has been told not to, he will want to know why not, and explanations do not always satisfy him. He wants to find out for himself. Great patience and understanding are required at this stage in his development, if one would win his confidence, without which it is very difficult to work.

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LOWERING THE INFANT AND MATERNITY MORTALITY RATES*

BY LUCILE SPIRE BLACHLY, M.D.
OKLAHOMA CITY

Before any logical discussion can be entered into relative to maternal and infant death rates, it is necessary to review some of the facts bearing upon the present rates, how they are arrived at, and how they compare with those of other countries.

Facts are intriguing. They challenge the attention of all thinking people; they furnish a solid, sure foundation upon which to build; they serve as reliable yardsticks in measuring progress or retrogression.

Figures are often mistaken for facts; figures are sometimes deceptive; they may be consoling as well as disconcerting; they should always be subjected to the closest scrutiny and used intelligently as a means towards arriving at facts. Any mortality rate, strictly speaking, is the ratio between the number of deaths and the total population in the same geographical area during the same period.

The Bureau of the Census does not report the maternal mortality rates as defined above, but as the number of maternal deaths in ratio to each one thousand living births. It reports the infant mortality rates both ways. These rates are based upon the maternal and infant deaths per one thousand living births in the birth registration area. Since the rate is based upon the ratio between deaths and living births, the reason for this is obvious. There are now about 36 states in the birth registration area and 39 in the death registration area. In order to qualify for entrance into the birth registration area, the state in question must show that it is recording properly at least 90 per cent of all births under state law or, for cities, under municipal ordinances. The same degree of accuracy and the same percentage

of deaths reported permits a state's entrance into the death registration area.

The birth registration area was established eleven years ago; the death registration area preceded it by only fifteen years. Human bookkeeping in the United States is a very new thing. Neither is this our only handicap, as no similarity in the manner in which any deaths were recorded, or even the nomenclature used in reporting them was attempted until 1910, when the international list of causes of deaths was compiled.

The Bureau of the Census gives the maternal mortality rate in 1922, the latest date available, as 6.6 per thousand living births and that of the infant mortality as 76.2 per thousand living births. A comparison of these rates with those of all the leading nations of the world places us in the unenviable position of the seventeenth as regards maternal mortality and quite low as regards infant mortality. Naturally this hurts our national pride. We attempt to explain these figures away by ascribing the difference to a lack of uniformity in the method of reporting vital statistics; to a likelihood on the part of the physician not always making it clear as to whether or not the death is puerperal; to the discrepancy in the definition of a still birth; to the tendency always prevalent in newer states to report deaths more fully than births; to the preponderance of colored people among whom there is known to be a high maternal and infant death rate; to a large number of recent immigrants from Southern Europe not yet acclimated, and others. As data meant to better our position, some of these are open to question. For example, if puerperal deaths were always correctly reported as puerperal, the maternal mortality rate would probably be raised instead of lowered. And while the mortality rates for colored mothers are undoubtedly higher than those of white mothers, these statistics must be used cautiously since in all likelihood the births of colored babies are not as well reported as those of white children. Furthermore, it has been found

*Read before the Section on Obstetrics and Pediatrics, Annual Meeting, Oklahoma State Medical Association, Oklahoma City, June 22, 23, 24, 1926.

when the maternal mortality rates were adjusted those of mothers born in the United States were still comparatively high, while those born in Southern Europe, Italy in particular, are much lower.

Using such figures as we have in our own state, our maternal mortality for 1925 is 5.2 and our infant mortality rate 73.7. These figures are consoling; but here again we have figures, not facts. As one of our esteemed physicians said in a letter to me recently: "A physician will move Heaven and earth to report a puerperal death as due to something else." However, the comparatively low figure might still obtain if every birth were reported.

Regreting that both the maternal and infant mortality rates for both the United States and Oklahoma leave us in doubt as to just where we stand comparatively speaking, still there is no student of maternal and infant mortality but what will stoutly maintain that they are much higher than need be. That the maternal mortality rate can be reduced, has been shown by the Association for the Improvement of the conditions of the Poor in New York City; by the recent report of Dr. Baily in the Berwyn Clinic in New York City; and coming closer home, by Dr. Fowler here in our own city.

Corresponding outstanding reductions in the infant mortality rates have been shown by The Infant Welfare Society in Chicago; by the study made by Dr. Beck in the College Hospital, Long Island; and the Metropolitan Life Insurance Co., at the Thetford Mines, in Canada. In every instance, these reductions were due to educational procedures which made available to patients obstetric and pediatric care of a standard much higher than that formerly available, used, asked for or permitted. Similar reductions could be had in every state and community where adequate medical, nursing and hospital facilities made available and the general public led to see the wisdom of using these special agencies for these special purposes.

In a state such as ours two years' experience in this educational field leads me to believe that in due time and with reasonable and persistent co-operation on the part of all groups concerned, both professional and lay, coupled with purposeful effort, adequate medical, nursing and hospital facilities can be made available and the public taught to make use of these services. By adequate service I do not have in mind large, free clinics and superior

hospital facilities in a few cities only, excellent as these are, but rather an adequate medical, nursing and hospital service scattered over the entire state.

Many general practitioners, especially trained in obstetrics and pediatrics, working in and out of local hospitals of high standards will be necessary to bring modern obstetric and pediatric care to a widely scattered rural population. Such a chain of hospitals of high standards properly managed and affiliated with the state's medical school should not only make possible superior care for the immediate future but should also furnish a means whereby better training could be offered obstetricians and pediatricians in the making and the general practitioners of the future kept abreast of the times.

That our original belief in the general public's desire for, and capacity to receive, enlightenment along obstetric and pediatric lines was not an error is substantiated by the ease with which we have introduced hitherto shunned subjects into the individual homes and what is still more encouraging, the public school system. A simple statement of the literature and helps available to the mothers of the state printed twice in the Oklahoma Farmer Stockman brought over 2000 requests for the literature — all from the most rural, isolated homes, many of the letters with mud sticking to the envelopes and some with the coupons sewed to the letters for want of a single pin. A still greater opportunity lies in the utilization of the organized machinery of the public school system. In order to reach the greatest number of potential mothers in the shortest space of time and with the least money involved, standardized credit courses in prenatal, infant and child care have been taught in all the Teacher Training Schools and similar courses next year will be offered student nurses in accredited training schools. Courses in child care have been introduced into a number of junior and senior high schools, more especially those of Oklahoma City, in order that by the time the teachers in training and the student nurses are in the field on their own, ready to carry this scientific instruction co-operatively to the most rural school in the state, the subject matter itself as well as the methods of teaching will have been given the acid test and revised to yield the best results. Furthermore, for those physicians who believe that an educated mother makes the best patient, the op-

portunity is now here for community minded physicians to be of invaluable assistance to the public as well as to the profession itself in lecturing in schools and in clubs and in advising with and encouraging these teachers.

Herein lies our best opportunity to save the greater number of lives and, what perhaps is still more important, reduce the factors that otherwise would result in crippled and constitutionally handicapped offspring to a minimum. Likewise we could save to the future families of children mothers with health and vitality still intact rather than the alarming number who make not only their children but themselves and all normal contacts miserable by reason of their warped and twisted minds made so by neglect.

Leaving out of consideration a more detailed account of how such a program might be put into effect a little attention is due those other smaller, though important groups, namely, the very young or even unborn babies and the mothers, who, in spite of careful prenatal care as we now know it and in spite of standard obstetric care as it is commonly practiced still die.

An intimate knowledge of the results of the maternal mortality survey made in Massachusetts in which 592 of the 984 cases were shown to be associated with operative intervention, led Dr. Normandie to say that better operative obstetrics must be taught in medical schools if the maternal mortality is brought below a certain percentage. This point seems well taken when it is recalled that the average age of physicians practicing in Boston (at least) was the lowest on record a year ago, and not only better operative obstetrics but better obstetrics in general seems imperative when one considers further the above mentioned survey made by Coffin et al., and notes that only 11 per cent of these 984 mothers had received standard prenatal care, i. e. (a) monthly visits to the clinic from the fifth to the ninth month inclusive or supervision by private physician, (b) monthly urinalysis from the fifth to the ninth month, (c) at least an abdominal examination and (d) pelvic measurements if a primipara.

The need of better obstetrics and pediatrics is again emphasized by the report of Adair whose analysis of approximately 240 post mortems on 51 antenatal stillbirths, 39 intrapartum still births, 36 postnatal still births, and 92 neonatal deaths showed that whereas toxemias of pregnancy and

syphilis were responsible for the larger number of the antenatal still births, birth trauma was evident in the majority of all the latter three groups.

SUMMARY AND CONCLUSIONS

Human bookkeeping in the United States is a very new thing.

The maternal mortality rate in the United States was 6.6 in 1922. This is the ratio of maternal deaths to every 1000 live births.

The infant mortality rate in the United States was 76.2 in 1922. This rate was based on the total number of deaths under one year for each 1000 live births.

The maternal mortality rate, using such figures as we have, was 5.2 for 1925. These are only figures. They mean little or nothing.

The easiest way to lower the infant mortality rate or the maternal mortality rate is to report every birth.

Oklahoma is not in the birth registration area.

Oklahoma is not in the death registration area.

Birth registration in Oklahoma has improved 30 per cent since 1923.

Death registration has improved 5 per cent since 1923.

Incidentally the Bureau of the Census is now making a check of Oklahoma to ascertain our standing.

The birth registration area was established in the United States in 1915.

The death registration area was established in the United States in 1900.

The international list of the causes of death was compiled in 1910.

Puerperal deaths are probably not all correctly recorded as such.

The maternal mortality rate is admittedly too high. The infant mortality rate is admittedly too high. Both can be lowered by improving the standards for medical, nursing and hospital care and by educating the public to use this service.

A rural state should have a program suitable to rural needs.

The public should be taught to understand, appreciate and demand superior obstetrics and pediatrics.

The obstetric and pediatric program should include ways and means whereby obstetricians and pediatricians and general practitioners especially skilled in these two branches can be adequately trained and kept trained — and we might add incidentally—paid for their services on a par with that of the surgeon.

The public is eager for scientific education along the lines of prenatal, infant and child hygiene.

Any sincere, reverent method of approach will secure abundant results but the most economic in point of time involved, personnel and money is through the public school system.

The quickest results for the present expectant mother is by direct correspondence.

These names are secured in the greatest number through the press, the nurses and the physicians.

Those coming through the press are obtained earliest, those through the nurses probably next and those through the physicians, exclusive of the obstetricians, relatively late, usually somewhat near term.

Discussion: Dr. W. A. Dean, Tulsa Okla.

The discussion of this paper deals with women during their pregnancy and puerperium, and human life in its intra and extra uterine existence, endeavoring to stimulate a downward trend of mortality, by inducing the aid of medical colleges, physicians, public health workers and civic organizations.

We will take up the physicians' duty, also touching upon the medical schools where the future physician is in the making.

Our women, whose lives are endangered by impregnations, can enjoy a better insurance of life and health if our professors and instructors in obstetrics will see that the junior and senior students be given intensive theoretical and practical training in obstetrics, keeping in mind not to make this subject a bore, but entertaining.

Obstetrics is one branch of medicine that practically one hundred per cent of medical graduates will have to practice. The average medical man on graduating and beginning the practice of medicine, with no internship in a general or maternity hospital, will be a liability instead of an asset in practice of modern obstetrics. Chances are he will not be able to accurately map out position of fetus; will disregard the necessity of auscultating the heart tones frequently; deliver his patient without sterile drapings or trained help. Then how can we expect our fetal and maternal mortality rates to drop?

May we all hope our medical colleges will give the junior and seniors intensive training by having each deliver ten or more patients under the direct supervision of a specialist in obstetrics, paying strict attention to asepsis, positions, fetal heart tones and immediate repairs of lacerations. The actual work of delivering normal or pathological cases should fall to the seniors with juniors observing.

The longest strides towards reducing our mortality rates lies in the proper training of our future physicians in college, with a standard training, then our women would be given an even chance of bearing children without undue risk of losing their lives or being left invalids, entailing an economic loss upon their family and community.

It is not in my sphere to dictate what the medical colleges should teach, but every graduate should, in emergency, be able to intelligently cope with the following: Proper application of forceps, version and vaginal bleeding, whether from placenta, praevia or ablatio placentæ.

Were it possible to force accurate reporting of maternal and fetal deaths, I am of the belief public opinion would force a higher standard of obstetrical training in our colleges, not allowing a graduate to practice unless he could qualify to practice obstetrics to a superlative degree. That is a dream, for our less courageous physicians will never report puerperal deaths due to their own ignorance or fault.

The causes of fetal death may be prenatal or post-natal, influenced by failure to obtain accurate histories, or carelessly-made physical examinations of expectant mothers; thorough physical examinations may be made, and careful histories taken with the examiner not able to interpret his findings.

Other causes of fetal deaths may be due to improperly applied forceps; failure to recognize disproportion of passenger to passage; indiscriminate use of pituitrin; not following fetal heart tones during progress of labor, and lastly, vaginal bleeding prior to delivery, looked upon with careless indifference.

One cause of fetal deaths, both prenatal and post natal, is syphilis. We should all rule syphilis either negative or positive in our pregnant cases, early as it is humanly possible.

SOME COMMON ERRORS OF DIAGNOSIS IN PEDIATRIC PRACTICE*

CARROLL M. POUNDERS, M.D.
OKLAHOMA CITY, OKLA.

To some the conditions dealt with in this paper may seem quite simple and elementary. However, the frequency with which I see such errors committed convinces me that this discussion is not altogether out of place. We need to better understand the things that occur most commonly in our daily practice.

"COLIC"

In this day a large per cent of babies are delivered in hospitals. If delivered at home the mother is usually placed in quiet surroundings and a nurse is employed, relieving her of all care and worry until she is able to be up. The baby is apt to do well during this time, nursing regularly, being satisfied, having regular bowel movements, crying very little, sleeping most of the time and gaining nicely. In other words, it is a well nigh perfect baby. The time comes for the mother to leave the hospital or to be up and take over the responsibilities of the household. The baby's disposition apparently undergoes a change. It continues to sleep fairly well in the mornings but becomes wakeful and fretful in the afternoons. It becomes constipated. The restlessness becomes worse, until the usual daily occurrence is for it to begin to cry and scream in the latter part of the day and keep this up at intervals throughout the most of the night—until it is exhausted. This happens evening after evening. The family gets very little sleep. The poor mother is almost driven to distraction. The father goes about his daily job of bread winning in a state of about fifty per cent efficiency. The family physician on his morning rounds sees the infant peacefully sleeping in its crib, apparently satisfied and comfortable. The performance is repeated nightly. Enemata are given. All the colic remedies are tried out. There is no improvement. One of two courses is pursued. After numerous consultations among the different relatives it is decided that the baby has "three month colic." Often some of the grandparents can vividly recall the fact that the baby's own mother had the same thing in early life. The parents become re-

signed. It is a family characteristic and must be borne. The baby will just have to "out grow it." Or the other possibility is that the family councils (and sometimes the family doctor himself comes in on this) decide that "the mother's milk does not agree with the baby" and another recruit is added to the army of bottle fed babies — the army that furnishes four-fifths of our deaths during the first year.

Now, there are cases of colic in breast fed infants and we may rarely see a baby that does not tolerate human milk. But about eight out of ten such cases as I have described can be explained in this way. While the mother remains at rest, is well cared for and relieved of her household responsibilities, she produces enough milk for her offspring. When she gets onto her feet, begins to take care of the household and tire herself out, the mammary glands do not function so well. In the morning, following several hours rest, there may be a normal amount of secretion. As the day goes on this amount is gradually lessened. Often, as night comes on, secretion practically stops. Hunger produces the same reaction in healthy babies all over the world — that is, a loud, lusty, continuous cry.

The management of these cases is simple and usually produces absolutely satisfactory results. In the first place, *do not take them off the breast*. Put them to the breast just as regularly as if the milk supply were abundant. Allow them to nurse a reasonable length of time (about fifteen minutes). Then give a sufficient amount of a proper formula from the bottle. And there is only one way of being sure of this — give them all they will take. The practice some pediatricists make of having the mother come to the office at certain intervals to weigh her baby before and after nursing is, in my opinion, the height of folly. And allow me to express the same conviction concerning the practice of sending a specimen of milk collected at one sitting to the laboratory for an analysis.

Unless the baby is weighed before and after *every* nursing in the twenty-four hours we cannot even approximate the amount of breast milk obtained. Six ounces may be obtained at one nursing and the very next time not more than one. So the only sure way to see that the baby gets enough nourishment is to give it all it will take following every nursing. If a proper formula is used and it is fed at

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regular intervals the procedure is perfectly safe. As to having single specimens of breast milk analyzed, there is a marked variation in the amount of fat content from time to time. A woman may show a variation of fat content ranging from two to five per cent at different intervals during the same day. It also depends, largely, upon whether the first part of the milk or the last part is taken. If an analysis is worth anything it must be a twenty-four hour specimen, collected at every nursing period, alternating the first part of the milk with the last. But, after all, the baby's weekly gain and its evidence of being satisfied are the real criteria as to whether or not the milk supply is adequate.

Another error, in my opinion, is the practice of almost literally stuffing these mothers with various so-called "milk producing" foods. An ample, well-balanced ration is essential, of course, but we must remember that the human body is not a test tube. We cannot make a mammary gland manufacture milk by simply furnishing the ingredients. There is more to it than this. What frequently happens if too much food is taken is an attack of indigestion or intestinal fermentation, and a further limiting rather than increasing the milk supply. The only measure that can be relied upon to increase the milk supply is the thorough stripping of the breasts by manual expression, after each nursing.

VOMITING

Another interesting condition is vomiting. I refer here to the infant who is either getting plenty of breast milk or a sufficient amount of a suitable formula. It vomits a great deal — often large amounts following each feeding. The vomiting is not very forceful but the mother is often kept busy changing the clothing. The baby cries a great deal, holds itself rigid and in a state of hypertonicity. It may be very nervous, starting at slight noises and being easily awakened. The crying often lasts most of the night. Constipation is present, the stools being well digested. It fails to gain weight and is a source of a great deal of worry to the anxious mother. There is no temperature and physical signs are absent. Such a baby is often taken from the breast and tried out on various preparations in the hope of finding something that will not be vomited. No improvement is noticed.

Here, too, the remedy is usually fairly simple. Such a patient is usually suffering from a hypertonic condition of the entire muscular system — including the smooth muscle of the gastro-intestinal tract — especially of the pyloric sphincter. The treatment consists of the administration of atropine, beginning with 1-1000 grains at each feeding and increasing if necessary, until there is a flushing of the skin. The dosage should be kept just below this point. In a few hours, as a rule, quite a change takes place. The vomiting ceases, the baby relaxes and sleeps normally and becomes almost a different individual. They will often sleep so soundly for a day or two as to cause the mother some concern. The atropine must be kept up until a period of several days has elapsed without vomiting. It should never be discontinued abruptly, else the vomiting may return. It is good practice to begin by omitting it at every other feeding and gradually leave it off entirely. I usually administer the drug in a 1-1000 solution, beginning with one drop in a spoonful of water just before each feeding. Sometimes it is necessary to increase this to three drops. When the vomiting begins to subside the medicine can be put right into the bottle.

OTITIS MEDIA

A third condition is seen most commonly during the winter and early spring. There is usually a history of the baby's having a cold. A temperature develops and varies a great deal; it may be as high as 104° for several days or it may be hardly noticeable. It is extremely irritable and may cry for several hours at a time. It sleeps very poorly and is disturbed by the slightest sounds. The child rubs its head on the pillow and seems unable to find a comfortable position. The appetite disappears and there may be vomiting. There may even be convulsions and meningeal symptoms. An ordinary physical examination may show a red, inflamed throat and nothing more. This picture is seen very frequently at certain times of the year. They receive treatment for all kinds of conditions, with apparently little benefit. The reason the real trouble is not discovered is because a complete physical examination is not made. No examination of a sick infant is complete without a careful inspection of the ear drums with either a speculum and head mirror or an electric otoscope. Especially is this true during the winter months. These cases of acute

otitis media are extremely common and in only a small per cent of them does the drum rupture spontaneously. They are readily diagnosed by the abnormal appearance of the drum. Instead of the normal pearly gray color there is a yellowish brown to a bright red color, the normal landmarks are obscured and a distinct bulging may be noticeable. The treatment where the drum is distinctly bulging, is, of course, myringotomy. It is very gratifying to see how quickly the child is relieved when this is done. I have seen them drop off to sleep before I had time to put away my instruments. Immediately following the incision very little pus may be seen. But within a few hours there is apt to be profuse drainage. The temperature shows an early decline, but there may be a slight elevation for several days.

PYELOCYSTITIS

A fourth condition which I wish to briefly discuss is very frequently overlooked. It is most commonly seen during the first two years of life, and I suppose the age of the patient is a big factor in explaining the difficulty of diagnosis. It is about three times as common in girls as in boys. The history is usually something like this: The child has a cold, a digestive disturbance or something that has a tendency to lower the resistance. Following this it does not seem to convalesce as rapidly as it might. It continues to be irritable, has a poor appetite, sleeps poorly and has irregular elevations of temperature. Vomiting is often present. It is treated for a number of conditions, depending to some extent upon the time of year. If it occurs during the summer it is apt to be regarded as a case of deranged digestion. If it is the season of colds it may be given the various remedies for infections of the respiratory tract. There is apparently little response to treatment and the progress is very unsatisfactory. The temperature may mount to 104° or 105° and is quite irregular. Early in the course, when the temperature is down, the child will want to play and can be kept in bed with difficulty. Later there is more weakness and prostration. Just about the time the temperature begins to rise there is often a mottling of the skin of the extremities. The baby is extremely cross and irritable, cries out when approached and objects to being moved. At feeding time it grasps the nursing bottle or breast as if hungry but soon turns away from it. About the second week there develops

a characteristic, yellowish pallor, with a flaccidity of the skin. The abdomen is sunken. The general physical examination shows practically no other signs except an occasional enlargement of the spleen.

Now, this discussion to many will seem quite elementary. But I have been surprised to see the large number of just such cases that have gone for weeks without the proper diagnosis having been made. In all febrile conditions in children the urine should be examined. That is the only possible means of eliminating a pyelocystitis. And a single negative specimen is never sufficient evidence to rule it out if the clinical symptoms indicate its presence. In my experience these cases in infants usually respond satisfactorily to sufficiently large doses of alkalinizing agents alternating with urotropin. I start them on ten grains of potassium citrate every two hours, leaving some litmus paper with the mother after showing her how to use it. Sufficient amounts are given for four or five days to keep the urine distinctly alkaline. Then I change to urotropine, usually about five grains every four hours, and sufficient amounts of acid sodium phosphate to render the urine distinctly acid. No case should ever be dismissed as cured until the fresh specimens of urine are free from pus cells and bacteria. It is a good plan to have the medication continued and to keep the baby under observation for six months after the symptoms have subsided.

PRENATAL CARE*

E. EUGENE RICE, M.D.
SHAWNEE, OKLA.

There is no division of obstetrics that is so much neglected by the general practitioner as that which concerns the proper management and care of the expectant mother.

The maternal and fetal morbidity and mortality can so greatly be reduced by the proper prenatal care that the advancement in obstetrics should be made toward anticipating any pathological condition that may arise as well as in its treatment.

It is essential that all pregnant women should be under proper medical supervision throughout the entire pregnancy, be-

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cause it is only by the proper prenatal care that pregnancy and labor can be made safer. Early and frequent examinations of the prospective mother can materially reduce premature termination of pregnancy, stillbirths, diseases and death of the child, and diseases and distress of the mother from toxemias, accidents of pregnancy and labor, and infections.

In the proper education of the expectant mother, instructing them in the hygiene of pregnancy, the importance of regular and frequent examinations, and warning them of the symptoms of danger which should lead them to consult their attending obstetrician the accoucheur can be assured the adequate care of his obstetrical cases.

DEFINITION

Prenatal care may be defined as that part of the maternal care which has as its object the complete supervision of pregnant woman in order to preserve the health, life and happiness of the mother and child.

Proper prenatal care should include the past history as obtained in any medical condition; a complete obstetrical history, both of the previous pregnancies and abortions and of the present pregnancy; a thorough physical examination, general and obstetrical, with a complete diagnosis of the case as to the presentation and position of the fetus, and condition of the pelvis and the fetus; and the instruction of the expectant mother in the hygiene of pregnancy.

PAST HISTORY

The patient's past history includes the developmental characteristics, previous medical and surgical diseases, the menstrual history, and an inquiry into the family history.

The history of the developmental characteristics includes the age of dentition and walking, the history of rickets or nutritional disturbances and the general growth and development of the mother.

The medical diseases that are of interest and which should receive individual inquiry are scarlet-fever, diphtheria, chorea, rheumatic fever, typhoid-fever, pneumonia, influenza, tuberculosis, nephritis and venereal diseases.

The surgical conditions of importance are pelvic or abdominal operations or accidents that might tend to deform the pelvis.

The menstrual history should include the cycle, the duration, the amount of flow, and the pain.

The family history of importance includes the presence of familial diseases, multiple pregnancies and difficult labors.

OBSTETRICAL HISTORY

The obstetrical history determines the character of previous pregnancies and abortions with their type of labor, condition of the child, the puerperium, and a history of the present pregnancy.

The history of the previous pregnancy should include a report of the health during pregnancy, the period of gestation, the character and duration of labor, the type of delivery and any complications. The report of the puerperium outlines the temperature, the number of days in bed, the occurrence of mastitis or thrombophlebitis, and the health since delivery.

A history of abortions cover the period of gestation, whether spontaneous or induced, the treatment, and any complications.

The history of the present pregnancy should include the date of the last menstruation and its character; the time of quickening; the estimation of the date of delivery; and any unusual symptoms that have been noted as headaches, nausea, vomiting, constipation, edema, visual disturbances, epigastric pain, vaginal bleeding, and pain, frequency, or burning on micturition.

PHYSICAL EXAMINATION

The physical examination of the patient requires a thorough routine examination of the entire body with special attention being paid to those parts or organs that are directly concerned with pregnancy.

The general examination should include a routine examination of the teeth, throat, mouth, thyroid, heart, lungs, and extremities, foci of infection and orthopedic defects and the variation from normal noted.

The Wassermann is of routine value and should always be taken in any suspicious case.

The breasts should always receive careful examination noting their size, the shape, scars, the condition of the nipples, the areola, and the presence of colostrum or any tumors.

The abdominal examination determines the form, shape, size, and the presence of striae, diastasis, or hernia and the muscu-

lar development and condition of the umbilicus.

External palpation of the uterus will give information as to its shape, height, and irritability; the location of the cephalic prominence and shoulder; and a diagnosis of the presentation and position of the fetus; the presence of ballotment; and the location, rate, and character of the fetal heart tones.

A vaginal examination should always be made at the first visit of the expectant mother if the examination is before the seventh month of gestation. After which time the rectal examination should suffice, unless there is a definite indication or doubt in the accoucheur's mind as to the condition present and then made only under sterile precautions.

Abnormalities such as edema, varicosities, condylomata, urethral anomalies, Bartholinitis, vaginal discharge; the condition of the pelvic floor; and the presence of rectocele or cystocele can be easily determined and noted.

The cervix should be examined vaginally or rectally to determine position, shape, consistency, evidence of previous injuries, new growths, the presentation, position of the fetus, engagement of the head, ballotment and the condition of the adnexa.

Examination of the anus will disclose the presence of fissures, fistula or hemorrhoids, and should not be overlooked.

The pelvic measurements are always important and every case should have a complete measurement and diagnosis of the type of pelvis.

Externally the interspinous, the intercrystal, the intertrochanteric, the external conjugate, and the transverse diameter of outlet are important, but are only suggestive while internally, the conjugate diagonalis with palpation of the pelvic contours, especially the sacrum, the promontory, the coccyx, the ischial spines, and the tuberosities will be of great aid in the diagnosis of the type of pelvis present and will aid to determine if there is any disproportion between the fetal head and the pelvis.

A complete urinalysis upon the first visit with determination of the specific gravity, the presence of albumen or sugar, and a microscopic examination to determine the presence of casts or an undue amount of pus, is paramount, as we know

the kidneys are the most vulnerable part of the body during pregnancy. A specimen should be examined at least every month for the first six months then every two weeks or more frequently if necessary until term.

Blood pressure readings are second in importance only to the urinalysis and should be taken at every visit.

The practitioner will greatly facilitate the ease of his prenatal care by providing a simple form of recording his prenatal findings to which reference can be easily made at the onset of labor.

MATERNAL INSTRUCTION

As soon as pregnancy is determined minute instructions should be given the expectant mother in the hygiene of pregnancy urging her to report at once to the physician any symptom that may affect her well being.

Instruction should be given as to the proper diet; the right amount of sleep, rest, exercise, and recreation; the type and amount of clothing, especially the shoes; the bath and the care of the skin; the care of the bowels; the care of the kidneys; the care of the teeth; the care of the breasts; intercourse during pregnancy; and the general hygiene of the home.

The patient should be told at her first visit to report at once to the physician the occurrence of any unaccountable symptom, especially obstinate constipation, shortness of breath; nausea or vomiting; visual disturbances; dizziness; edema, especially of the face, hands, or ankles; changes in micturition as frequency, pain, or burning; severe pain in the lower abdomen; or vaginal bleeding.

The instruction of the expectant mother may be aided greatly by referring her to a competent work on this subject or the physician may have a sheet of instructions to supply his patients which contains those things he thinks essential.

CONCLUSIONS

1. Prenatal care is essential for the proper protection of the life, health, and happiness of the mother and child.

2. A complete diagnosis of every case always remembering each case requires individual study, will aid in anticipating and avoiding any possible complications.

3. Frequent and regular examinations will enable the accoucheur to prevent any pathological condition arising.

4. Proper maternal instruction will allow the mother to give her full co-operation to the attending obstetrician.

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GENTLENESS IN UROLOGY*

REX BOLEND, B.S., M.D.

Associate Professor Urology, University of Oklahoma.

It is with some few misgivings that I attempt a paper on the above subject and had not Doctor J. B. Clark of New York preceded me, I doubt if I should be writing on the subject now, because everything can be said in the one sentence: "Avoid trauma, both chemical and mechanical in management and treatment of the urological tract."

This is not very definite, but to attempt to tell this body how to be gentle with their manipulation would be presuming indeed, as well as endless, to enumerate all details. For that reason there will be many things omitted that you will think of, many "pet tricks" in technique that are as good or better than the ones mentioned. Our efforts will be confined to emphasis of some well known principles, recalling some history, and perhaps adding a new thought here or there.

It has been my custom to carry on the blackboard in the clinic the before mentioned "Avoid trauma, chemical and mechanical, and observe gentleness in all manipulations of the urethra."

Under trauma, for teaching purposes, we place: (1) Strong drugs. (2) Irritating conditions. (Cotton over glands, string tightly around glans, etc.) (3) Too forcible use of a mild drug. (4) Drugs, though not strong, which have a peculiar irritating effect on a certain individual. (5) Incompatible drugs. This is a point it would seem, which need not be mentioned, but I have repeatedly seen men use novocaine in the urethra and bladder, followed by mercurochrome. This immediately precipitates leaving an inert irritating substance. (6) Sounds and instillation tips,

which are too large. (7) Improper and poor technique in introducing instruments. (8) Roughness in prostatic massage. (9) Over distention of bladder for Cystoscopy. (10) Over distention of kidney pelvis with solutions.

It is really appalling how slowly we seem to realize a principle in the practice of medicine. For example: I can well remember the very strong solutions we formerly used. How we would fill a patient's bladder to over-distention with an irrigator, hung high on the wall followed or preceded by a sound of such caliber that would cause bleeding. Some of us can remember the force pump used to inject solutions into the bladder. Since these methods have been discontinued by most of us, we see less strictures of the urethra, fewer cases of epididymitis, and other complications of the urethral infections.

It is rather rare now for a young man to report with multiple urethral strictures. In the face of this fundamental principle, why do some use such force in washing a kidney pelvis? After patients show marked evidence of pain, I have seen operators continue to inject more solution. If 3.5 c.c. fill the kidney pelvis, will 10 c.c. do any more good? Besides the solutions so strong they will destroy any mucous membrane, there are certain people who do not tolerate the average strength solution. To use them on such an individual constitutes trauma in this connection—so why, if one per cent mercurochrome produces intense pain, and irritation, continue to use it?

We are very careful about incompatible drugs in our prescriptions, though daily I venture to say, many irrigations are given with silver nitrate added to boiled tap water, or silver nitrate injected into a bladder with small quantities of urine still present. Why not take a tip from our Colleague in the Ear, Nose and Throat department. Did any one ever hear of them prescribing a gargle of silver nitrate or distending an antrum with it?

The average caliber of the urethra is well known, but as we all know, varies considerably. For ordinary instillations, why use a tip, size 28-F, when the meatus admits only 24. There are occasions when it is necessary, but never during the acute stage of an infection. In passing, we might add, the very *small* tip is more damaging than the large.

*Read before the Section on Genito-Urinary, Dermatology and Radiology, Annual Meeting, Oklahoma State Medical Association, Oklahoma City, June 22, 23, 24, 1926.

The sound is indispensable to the urologist, but in clumsy hands or used without knowledge, or respect for the pathology present, it is perhaps on a par with the sharp curette. To use a sound that does not dilate is absurd of course, but just here is where utmost carefulness, gentleness and judgment must be exercised. The worst possible trauma is the result of the improper use of the sound. I do not believe any but the most skilled in its use should use anything less than 18-F in the steel sound.

I mention roughness in prostatic massage, before this section, only to call to your mind how little the average practitioner knows about it, and the damage that can be done by "poking" or rolling the finger about the gland, and perhaps never recognizing the prostate or vesicles. It is really not so uncommon to follow a careful internist who has pronounced a prostate O. K. and be able to express pus on proper massage. There is so much to be said on the subject, and it is so little understood, that I feel it is time that those of us in Urology should begin to tell our colleagues in other lines, some facts about the prostate.

There are times when the bladder must be tightly distended, in order to see or enter the ureteral orifice, but these are few and the more ureteral catheterizations I do, the more I find can be done with the bladder merely smooth. And many, many times one can readily enter the ureter long before the distress signal. How many of you have been cystoscoped, and why would you dread it? Because the average Urologist is not nearly so gentle or careful as the average Dentist, whom we all dread.

Once a catheter is in the ureter, extreme care and gentleness is of the utmost importance. Reference has already been made to over distention of the kidney pelvis.

There are many technical contrivances made for injecting the kidney, any one of which is all right, but not essential to a careful operator. I have been asked this question: "Isn't it necessary for complete distention of the kidney pelvis in order to get good pyelograms?" My answer is: Complete filling of the cavity, yes, but distention is not necessary. The volume of pyelographic solution is not an important factor for a good picture.

MUSCLE TUCKING FOR STRABISMUS*

WALTER A. HUBER, M.D.
TULSA, OKLA.

Surgery of the ocular muscles for the relief of squint can be divided into two general classes: First, operations to weaken the overacting, or supposedly overacting muscles. These have consisted of cutting the tendon or belly of the muscle either entirely or partially, the object of which was to weaken or inhibit the pull of that muscle. Second, those operations whose purpose was to strengthen the weak or underacting muscles. This was accomplished by advancing the insertion of the muscle, by cutting off the end of the muscle and stitching it to the stump or to the sclera in front of the stump and thus shortening it, or by some form of reefing or tucking. Before enumerating the virtues and defects of these methods I shall review the historical facts leading up to our present day methods.

The first authentic tenotomy for the relief of squint was performed by Dieffenbach of Berlin, October 26, 1839. Dieffenbach performed on the living subject the operation that had been performed on the cadaver by Stromeyer and which he described in his book in 1838. The first tenotomies were tenotomies proper and not myotomies, in that they cut the muscle close to the sclera. In their zeal to get more effect, they soon began to cut wider into the capsule and further back on the muscle. Dieffenbach himself was one of the first to do a myotomy. He says: "If the conjunctiva be divided over a greater arc and toward the back of the globe, if the cellular tissue be extensively separated and the muscle be detached far back and divided at its middle, then the eye even in cases in which the whole cornea was hidden in the internal angle, stands quite straight after the operation."

This cutting of the belly of the muscle and the complete detachment of the muscle and capsule were attended by such glaring deformities, external deviation, sunken caruncle, and exophthalmos, that the operation for squint came into bad repute. About this time A. Von Graefe admonished his colleagues to adopt a more

*Read before the Section on Eye, Ear, Nose and Throat, Annual meeting, Oklahoma State Medical Association, Oklahoma City, June 22, 23, 24, 1926.

conservative operative procedure. He advised opening the conjunctiva closer to the cornea making a small opening and doing a tenotomy as near the sclera as possible and using afterward a conjunctival stitch. This operation is extensively practiced today.

These defects of tenotomy caused another operation to be developed—a strengthening of the weaker muscle. This was first devised by Dieffenbach to relieve an external deviation produced by myotomy done by himself in 1842, but with little success. It was left for Guerin, of Nancy, in 1849, to give us a more practical procedure. This he applied in a case of secondary squint. The first accurate description of an advancement operation was by A. Von Graefe in 1857. This was his famous "Faden operation." The same year, G. Critchett of London, described his three stitch advancement operation, which Beard said "might be called the parent of most modern operations." In 1897, Landolt made some improvements in Critchett's advancement, and his operation is extensively practiced at present. Almost every advancement operation since has been more or less a modification of Critchett's or Landolt's. The hope, aim and ambition of each and all (and their names have been legion) have been to shorten the weaker muscle so as to make it cope with the overacting one, and this was done by muscular advancements (Critchett, Landolt, Weber, De Wecker, Prince, Verhoeff, Worth, et al.); capsular advancements (Knapp, De Wecker, Fox); resections (Vieusse, Harman, et al.); and by tucks (Todd, Bishop, Bruns, Clark, Briggs, Calkins, et al.). Then to obtain results there was the partial or complete tenotomy and advancement, resection, or tuck, a combination of operations.

The advantages of tenotomy were its ease of execution, its slight reaction, and the time saved for the patient. Its disadvantages were its uncertain end-results, its bad after-effects in way of sunken caruncle, external deviation, exophthalmos, and the interference with convergence. The latter is possibly the greatest fault, particularly in cases in which binocular vision can be secured.

The advantage of the tucking, advancement or resection operation is that we are restoring an eye to approximately normal function by increasing the action of the weak muscle instead of decreasing the ac-

tion of an overacting muscle as in tenotomy. In other words, we are making a weak muscle stronger instead of making a strong muscle weaker. The disadvantages of this procedure are its inexactness, the amount of traumatism necessary to good advancement as compared to tenotomy, and the necessary greater discomfort and delay from work, as well as after-redness, and more prolonged recovery.

The tucking operation certainly has some advantages over the method of advancement or resection. First, the needles are not placed in the sclera or episcleral tissue and there is no danger of perforating the sclera. Second, its effect can be more accurately regulated. Third, there is no danger of sutures cutting through or slipping.

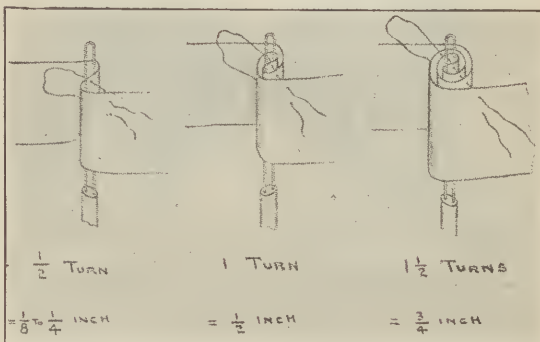
It is almost invariably necessary to perform a tenotomy in connection with the tucking operation. Most operators nowadays use either tucking, advancement, or resection and tenotomize more or less as needed—a wise practice. If an attempt was made to secure a satisfactory result by either tucking or advancement alone a tremendous strain was put on the sutures. Frequently an exophthalmos was produced. Therefore it was a good plan to relieve that strain by tenotomy of the opposite muscle. If this general method was followed the largest percentage of good results would be secured. That is, in convergent strabismus, the operator should do all he could by a tucking operation, either with or without a tucker—of course noting the effect as he goes along—the patient should be under local anesthesia, then tenotomize the internal rectus more or less.

Many operators preferred general anesthesia. This in my opinion is not satisfactory. It left too much to the imagination and the result could not be ascertained until after the patient had recovered from the effect of the anesthesia. Nowadays, with all the improvements in local anesthesia, with Novocain injected deeply into the orbit, back into the belly of the muscle it was possible to secure almost perfect anesthesia, so that the tendon could be handled and folded without causing suffering to the patient. When one was hurting a patient the operator was as anxious to finish as the patient was, therefore, likely to stop before he should.

Have been using Calkin's muscle folder with his method of muscle shortening for sometime. The advantages claimed for

this method of muscle shortening for strabismus are simplicity of instrument and technic, and a manner of putting in of sutures which makes cutting through or slipping of sutures almost impossible. The tendons of the ocular muscles are thin and not adapted to offer any great resistance. It is a matter of surprise to find they are so thin and non-resistant especially in the direction of their fibres. A suture can very readily cut out, and the muscle itself is less resistant than its tendon. The looped hairpin like portion of the folder is of very rigid steel, adjustable in length so as to fit about the muscle, and fits snugly into two holes in the handle of the

handle of the instrument, and therefore there is no danger of using too much force, thus tearing or otherwise injuring the muscle fibres. After rotating the handle of the "folder" as above described one, two, three or more turns, the assistant holds the instrument with prong anteriorly and the prongs at right angles to



muscle fibres. Two double armed sutures are used with a special needle, using silk. A special needle has the eye at right angles to the curve of the needle, so the suture more readily passes between the prongs of the loop. Insert the needles coming out well into the tendinous muscle insertion. Two mattress sutures are used and should also include central portion of muscle. Passing the needle between the prongs of the loop makes this step of operation very

"folder." Fig. 1. This prevents the two prongs (hairpin like part) of loop from bending or twisting as the muscle is being "folded." Prong No. 1 of loop is fixed in the handle and prong No. 2 is movable and separates from the handle of instrument. The muscle is exposed by a longitudinal or vertical conjunctival incision. After freely separating the muscle on all sides, the hairpin like part of folder is placed about the muscle with one prong behind and the other in front of muscle. A. The movable prong No. 2 of loop is turned until the curved end, in which is a hole, is opposite the fixed prong No. 1. The two prongs are then snapped together. B.

The "folder" is then shifted until the prongs are midway between the insertion of muscle, and that part of muscle as far back from the insertion as is thought necessary to obtain the desired shortening. Keeping the two prongs always at right angles to the muscle fibres, the handle of the "folder" is then rotated so that the outer prong moves away from muscle insertion and the prong beneath moves toward the muscle insertion. As many half-turns of the handle can be made as is necessary. The amount of tension used as the muscle is being "folded" is very readily sensed by the fingers holding the



easy, with no danger of passing the needle too deeply, and insures a very accurate placing of sutures. Only loosely tie a single knot in each suture, and then remove the instrument entirely. The end of loop is now separated and the fixed prong entirely withdrawn. Prong No. 2 is now removed and the sutures securely tied. Then tighten this knot and tie the second half of

knot. Cut end of sutures off short. Close conjunctiva with silk or gut. Fig 2 is a diagram showing the number of half turns of "folder" necessary to take up a given length of muscle. This is only approximate. This diagram also shows the suture piercing the muscle several times, thus locking the folds together. The resulting hump soon disappears and furnishes no argument against the method.

During the last fifteen months I have done this tucking operation on about seventeen eyes and have had most satisfactory results. Fig. III shows squint of 65 degrees corrected by this method.

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PLASTICS OF THE EXTERNAL NOSE*

CURT VON WEDEL, M.D.
OKLAHOMA CITY

I will discuss to-day very briefly some of the more salient facts which have to do with the reconstruction of the external nose. Deformities of the external nose may be divided as to origin into three great classes: Congenital, traumatic and those due to disease. Our slides today will show an example of each type. Our discussion, however, will be limited to the repair of simple traumatic injuries of the external nose.

The care of the recent fractured nose is of very great importance and cannot here be discussed in detail. In its reduction, an anesthetic should always be given and the depressed fragments of the nasal bone and the nasal portion of the maxillary bone should be lifted and replaced. It is usually necessary to hold this in position by means of a splint. Occasionally, however, one can secure good apposition by a simple pack. There are various splints on the market, the body of some being held to the forehead; others being attached to the teeth by dental processes.

*Read before the Section on Eye, Ear, Nose and Throat, Annual meeting, Oklahoma State Medical Association, Oklahoma City, June 22, 23, 24, 1926.

In the replacement of an old fracture, we usually give an anesthetic. In select cases, however, some of these can be replaced under a local. The low columnella incision is always used, the tissues freely separated in all directions, and the nasal bones with the nasal portion of the maxillary freed with a small angular chisel. With our fingers we then mold the liberated bones into normal position. It is usually necessary to hold these in position by using an external splint. Any little spur or irregularity which is left may be rasped with a Joseph rasp or pinched off with small forceps.



NO. 1—SHOWS DEFECT OF ALA AND LIP BEFORE AND AFTER OPERATION. NOTICE THE ROUNDNESS OF THE NOSTRIL.

The deflected, twisted or crooked nose is corrected in the same manner. A columnella incision is always made; the deflected bone separated from the maxillary with a chisel and replaced to normal position. Any bone spur which is left behind is smoothed off with a chisel or rasp.

Redundancy or bowing of the cartilage is overcome by the incision of strips either laterally or in criss-cross manner.

Depression of the bridge, or saddle nose of traumatic origin, offers one of our most brilliant fields. We will limit our discussion to the treatment of traumatic saddle nose. The treatment of syphilitic saddle nose is an entity in itself and cannot be discussed here.

Before beginning any incision, a cast of the defect is made with dental mold, the mold extending from the infra-globella notch to the rounded portion of the nostril. We always use costal cartilage. This cartilage is obtained from the right costal border, a larger piece than is necessary being removed. Any excess we have can be readily inserted under the skin for future use. The cartilage is cut, with the mold as a pattern, so as to be as nearly ac-

curate as possible. It is then put aside and the columnella incision made. The skin is raised from the nasal bones, held up to the infra-globella notch. The periosteum is then incised and lifted from the nasal bones, carefully avoiding contamination. The graft is inserted, the upper end being forced underneath the periosteum to avoid lateral displacements. If the cartilage is found to be too large, it should be removed and pared down to the proper size. The columnella incision is then closed with two or three interrupted horsehair.

In cases of saddle nose associated with a short columnella where the columnella has been destroyed by the original trauma or by faulty surgery, and the tip of the nose has fallen, it is necessary to add a short leg to the implant. The only difference in our procedure is that the original cartilage graft is cut long enough to include the short leg. A wedge is cut from



NO. 2—SHOWS ATAVISTIC RECEDING NOSE WHICH WAS ELEVATED BY CARTILAGE IMPLANT, BEFORE AND AFTER OPERATION.

the cartilage and the shorter leg bent at right angles. The graft is then inserted in the usual manner, the tip of the short leg of the graft being forced against the spine of the maxilla and the perichondrium sutured to the philtrum. In this manner, the short leg of the graft holds the long end of the graft upward so as to lift the nose and hold it in a normal manner.

If the nose is extremely flattened and broadened, and the lip slipped downward over the bulging maxillary ridge, the lip and nose are freed by an incision underneath the lip inside the mouth. The nose and lip are freely mobilized and pushed upward on the maxilla. Deep sutures are then placed to secure the nose in the new

position. This will elongate the columnella sufficiently to allow a graft to be implanted to hold the nose outward and forward. In some of the extremely flattened congenital noses, it is necessary to implant a cartilage directly under the nose.



NO. 3—SHOWS BADLY FRACTURED NOSE BEFORE AND AFTER.

There are many deformities of the ala, congenital and otherwise. We will take up today only correction of the simple flattened ala. We are showing a single slide of this operation. It is necessary to make a columnella incision and extend this incision around the base of the nostril, up to the external portion of the ala. A wedge is then taken out of the tip of the nose and the entire ala and nostril rotated inward and forward.

The necessity for plastics of the nose in this day of automobiles is becoming an ever increasing need. With the knowledge that we are able to offer so much to our



NO. 4—SHOWS FRACTURE OF NASAL AND MALAR BONES BEFORE AND AFTER OPERATION.

patients, with a negative risk, it becomes our duty to do all we can to aid them by reconstructing any damaged or congenitally disfigured member. We know of no single means of giving a patient so much real pleasure as the removal of a disfiguring blemish.

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DR. CLAUDE A. THOMPSON.....Editor-in-Chief
Barnes Building, Muskogee, Okla.

DR. P. P. NESBITT.....Associate Editor
Palace Building, Tulsa, Okla.

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EDITORIAL

NEXT ANNUAL MEETING—A MESSAGE TO ALL CONCERNED

This year the annual meeting will be held at Muskogee, and approximately from one to two weeks earlier in the month than usual, in order to avoid conflict with other meetings to be held in the State, and which it was desired to cooperate in their success by cooperating to the extent of selecting different dates. The meeting will be held May 4, 5, 6, 1927, Wednesday, Thursday and Friday. In order to have no last moment confusion, almost inevitable under

any conditions, and that the program may be well balanced and every section and interest represented, it will be absolutely necessary for section chairmen and those proposing contributions to begin preparations of their subjects at once. The tentative program will appear, as far as completed at this time, in the April Journal, which must be in the mails not later than the 20th to 25th of April. In order to prepare this issue for such date it will be necessary to have all the copy for inclusion in this issue as far in advance as possible. One of the upsetting features of every annual program is the exasperating habit of some of our members writing their papers, sending in the title, then altering both title and paper as per whim schedule. Please cooperate this year by reducing that to the vanishing minimum and by having your matter ready early as possible.

ETHICS—LEGAL AND MEDICAL

There is food for reflection in reviewing the Literary Digest for January 15th, which deals with the opinion of men of high authority on questions of ethics. The issue concerns itself solely with the aspects of ethics and its application to legal matters, but incidentally the medical profession is drawn into the matter, and indeed, in an enviable light. Quoting the gist of statements emanating from Chief Justice Taft, and an editorial from The Herald of Gospel Liberty, this is noted:

"A bar association ought to be helpful toward law enforcement in the community as a board of health is toward the health of the community. Yet it seems preposterous to suggest such a thing. The medical profession in any community will do all within its power to keep quacks and charlatans from practicing and to close up the cesspools which breed disease—and any doctor would be barred from the medical association who tried to release and spread disease. But no criminal is ever so dastard and no cesspool of crime so loathsome or perilous to the community that some member of the legal profession will not rise in court to their defense and use every scheme known to jurisprudence to secure the continuance of that particular pestilence in the community. And yet that lawyer will be recognized as an honorable member in good standing by the bar association that should have as its highest motive and guidance the riddance of the community of crime."

"Comparison is odious," but, we thank you for these kind words. It is regrettable

that they cannot be blazoned upon the minds of every little pettifogging lawyer, every carelessly selected jurymen, the former who too often brutally assails the individual physician in court with every sort of impossible allegation, the latter so pitifully incompetent, sitting sagely—and fully as competent—as an owl on a limb, trying to solve a question of pure science of high technical character, when he should be solving the problem of where best to place his fertilizer, or which door is to receive the groceries he delivers.

There is one thing in this connection it may be well for certain of our members to remember, and that is the discredit and criticism often arising from their appearance in court, their rubbing shoulders, as it were, and wallowing in the mire of legal slime, with lawyers of little or no character, bereft of ideals and honor, and whose only object is to release their criminal, regardless of the means by which it is accomplished. Oklahoma, a new state, has witnessed outrageous examples of the miscarriage of justice when such lawyers, and their complaisant physician accomplices have joined forces, confused the issues, beclouded the poor mentality of juries, and freed a criminal upon the public. These practices alone, fortunately rare, perhaps demand drastic correction more than any other one thing with which our profession is involved.

Editorial Notes—Personal and General

DR. J. P. BARTLEY, Duncan, is in Kansas City doing some special work.

DR. J. M. BONHAM, Hobart, has been elected president of the Hobart Country Club.

DR. R. F. TERRELL, Stigler, who has been ill for several weeks, is reported as improving.

DR. and MRS. J. W. PADBERG, Carnegie, announce the birth of a daughter, Ella Lee, born at Touro Hospital, New Orleans, January 9, 1927.

DR. L. E. EMANUEL Chickasha, has been selected as president of the Oklahoma Hospital Association vice Mr. Paul Fesler removed to St. Paul.

OKLAHOMA SOCIETY FOR CRIPPLED CHILDREN held a clinic for two days early in February at Muskogee. The clinic was conducted by Drs. Wade H. Sisler, Tulsa, and Wm. P. Fite, Muskogee, with the aid of many visiting nurses and physicians who volunteered their services. Several officers of the organization, including Mr. Lew Wentz, Ponca City, who has contributed

largely to the financial upkeep of the organization, were present.

DRS. A. G. COWLES, Ardmore, and EARL D. McBRIDE, Oklahoma City, recently held a clinic for crippled children under the auspices of the Ardmore Rotary Club.

DR. F. B. FITE, Muskogee, recently made a trip to Washington in the interest of the transfer from the City of Muskogee to the Veterans Bureau of the Municipal Hospital.

DR. WINNIE M. SANGER, Oklahoma City, past president, Oklahoma Federation of Women's clubs, represented Oklahoma at a meeting of the National Federation held in Washington in January.

DR. C. W. HUGHES, Muskogee, for the past four years Assistant Medical Officer in Charge, U. S. Veterans Hospital, has been transferred to St. Paul where he will assume similar position in the new hospital about to be opened in that city.

DR. WILLIS CAMPBELL, Memphis, was the guest of honor of the Tulsa County Medical Society December 17, reading a paper illustrated with movie cartoons on the subject of "Ununited Fractures." The paper provoked a great deal of interest and discussion from surgeons who were present. The meeting was held at Oklahoma Hospital and light refreshments were served after the conclusion of the program.

THE AMERICAN COLLEGE OF SURGEONS, district meeting, composed of the states of Oklahoma, Texas, Arkansas and Louisiana, met at Tulsa January 28-29. Through the courtesy of Oklahoma members many physicians not members availed themselves of the opportunity to attend the meeting. The notable features were hospital conferences, papers by Dr. W. W. Chipman, Toronto, on Septic Conditions of the Uterus, by Dr. Kreuscher, Chicago, on Bone Malignancies and Fractures. Among the medical notables present and participating were Father Mouliner, Milwaukee, Head of the Catholic Hospitals of the United States, Franklin Martin, Chicago, General Secretary, and M. T. McEichern, Chicago, Director of Hospital Activities of the College. The meeting was one of the most instructive, constructive and successful ever held in Oklahoma.

COUNTY OFFICERS FOR 1927.

LINCOLN COUNTY elected: President. W. H. Davis; vice-president, J. W. Adams; secretary, J. M. Hancock, and delegate, A. M. Marshall, Chandler.

OKFUSKEE COUNTY elected: C. M. Bloss, president and R. Keyes, secretary, Okemah.

PONTOTOC COUNTY elected: President, M. C. McNew; vice-president, W. M. Webster; secretary-treasurer, C. F. Needham; delegates, Sam A. McKeel and W. M. Webster, all of Ada.

WOODS COUNTY elected: President, Elizabeth Grantham; vice-president, Howard B. Ames; secretary-treasurer, Oscar E. Templin, Alva.

MARSHALL COUNTY elected: President, O. E. Welborn, Kingston; vice-president, T. A. Blaylock, Madill; secretary-treasurer, W. D. Haynie, Kingston; delegates, J. L. Holland, Madill and W. D. Haynie, alternate.

ROGERS COUNTY elected: Caroline Bassman, president; Wm. P. Mills, vice-president, Claremore; Walter A. Howard, Chelsea, secretary-treasurer; delegates, W. A. Howard, alternate, W. P. Mills.

BECKHAM COUNTY elected: President, H. K. Speed, Sayre, and secretary-treasurer, G. H. Stagner, Erick.

TEXAS COUNTY elected: Wm. H. Langston, president and R. B. Hayes, secretary, Guymon.

GRADY COUNTY elected: President, E. L. Dawson; vice-presidents, W. R. Barry and G. R. Gerard; secretary-treasurer, D. S. Downey; delegates, D. S. Downey and J. C. Ambrister; censors, H. C. Antle and A. B. Leeds, Chickasha.

DOCTOR EBEN N. ALLEN.

Dr. E. N. Allen, McAlester, for more than a quarter of a century one of the leading surgeons and citizens of Indian Territory and Oklahoma died at his home after a prolonged illness, January 5, 1927. Heart disease is stated as the cause of death. Born in Kentucky in 1855, he moved to Missouri about 1875, afterward attending and graduating from the Kansas City Medical College in 1880. After practicing in Missouri and Kansas until 1885, he moved to Indian Territory locating in what was then known as North McAlester—the present City of McAlester did not then exist—and at once assumed a position of leadership in medical and civic affairs, holding advanced positions of trust and respect until his death. Dr. Allen comes from a long line of prominent Kentuckians well known to the nation. One of his family was founder of the Kentucky Military Institute, an uncle, Robert D. Allen of West Point was recognized as one of the leading mathematicians and philosophers of his time. Appointed first Chief Surgeon for the old Choctaw line, he remained identified with that road until it became part of the Rock Island System, moving for a time to Little Rock as General Surgeon and when that post was discontinued, returned to McAlester, where he again resumed his old position until two years ago a severe heart attack forced him to relinquish his life's work, the practice of medicine and surgery. Dr. Allen was a most genial, courteous and able man. His disposition was at all times sunny and he was ever ready to extend a helping hand to the needy. To the young physician he stood as friend and adviser under all circumstances. Among his good works there is left a monument in All Saints Hospital, which he was instrumental in organizing, at a time when a hospital was practically unknown in this country, in fact All Saints is probably the oldest hospital in the State. He is survived by his widow and two daughters. A charter member of the Indian Territory Medical Association, he has ever retained his interest in organized medicine. A Presbyterian in religion, his funeral was conducted under the auspices of that church at McAlester, January 7th, after which interment was made in Oak Hill Cemetery.

DOCTOR WILLIAM S. WOODFORD

Dr. W. S. Woodford of Douthat, died January 7, 1927, as a result of injuries received ten days previously when his automobile overturned near Springfield, Mo., while he and his family were enroute to their old home at Urbana to attend the Christmas Holidays. Dr. Woodford was 51 year old and is survived by his wife, Mrs. Gettie Woodford and five children.

DOCTOR JOHN CHARLES MAHR.

Dr. J. C. Mahr, former State Commissioner of Health, died in Oklahoma City, after a short illness, Saturday morning, January 15, 1927.

Born in Homer, Illinois, September 13, 1867, his family moved to Kansas in his youth, where he attended the general school available, graduating in medicine from the Kansas City Medical College in 1889. After that he did some special work at the University of Chicago. Practicing for a time in Kansas he later moved to Oklahoma Territory, settling at Tecumseh upon the opening of the Kickapoo Reservation to settlement, removing from that place to Pond Creek. He was one of the first county commissioners of Grant County. He then located in Shawnee where he practiced until statehood when he was appointed Secretary of the first State Board of Health. A year later the Department was organized upon the plan now in operation and he became the first State Commissioner of Health, which position he held through the administrations of Governors Cruce and Haskell. At the conclusion of this service he entered the World War as Captain in the Medical Corps and was attached to the 107th Cavalry. After close of the war he returned to Oklahoma City entering the Public Health Service as Director of Venereal Disease Control which work he was engaged in at the time of his death. He is survived by his widow, mother and a son, John S. Mahr, who is connected with the State Banking Department. Funeral services were held in Oklahoma City under auspices of the English Lutheran Church. Among the active and honorary pall bearers were many men prominent in the past and present affairs of the state, associates and friends of Dr. Mahr. He leaves behind him a host of friends who will always recall that he was possessed to an unusual degree of the great virtues of fidelity and loyalty to his friends.

CANADIAN COUNTY elected: President, L. W. Wolfe, Okarche; vice-president, W. P. Lawton; secretary-treasurer, J. T. Riley; censors, T. M. Aderhold, J. W. Muzzy and G. W. Taylor; delegate, H. C. Brown, all of El Reno.

WASHITA COUNTY elected: President, A. M. Sherburne; vice-president, B. W. Baker; secretary-treasurer, A. H. Bungardt, Cordell; delegate, C. Doler, Foss.

CADDO COUNTY elected: President, E. L. Inman, Apache; vice-president, E. W. Hawkins, Carnegie; secretary-treasurer, Chas. R. Hume, Anadarko.

GREER COUNTY elected: President, J. B. Lansden, Granite; vice-president, W. O. Dodson, Willow; secretary-treasurer, J. B. Hollis, Mangum.

ATOKA and COAL County Societies have consolidated their membership and will hereafter be known as Atoka-Coal County Society. These societies were formerly merged, but separated after a time. Officers for the year are: President, C. C. Gardner, Atoka; vice-president, W. B. Wallace, Coalgate; secretary-treasurer, Lemuel E. Gee, Stringtown.

CRAIG COUNTY elected: President, F. T. Gastineau, Vinita; vice-presidents, C. F. Walker, Grove, and C. P. Bell, Vinita; secretary-treasurer, Louis Bagby; censor, W. R. Marks, Vinita.

PAYNE COUNTY elected: President, L. R. Wilhite, Perkins; vice-president, W. B. Hudson, Yale; secretary-treasurer, G. H. Gillen, Cushing; delegate, C. E. Sexton, Stillwater.

CLEVELAND COUNTY elected: President, W. T. Mayfield; vice-president, T. J. Dodson; secretary-treasurer, B. H. Cooley; delegate, C. S. Bobo, alternate, B. H. Cooley; censors, Drs. Gable, Day and Steen, all of Norman.

CUSTER COUNTY elected: President, C. H. McBurney; vice-president, J. T. Frizzell; secretary-treasurer, E. E. Darnell; censor, C. J. Alexander; delegate, E. E. Darnell; alternate, Ellis Lamb, Clinton.

JACKSON COUNTY elected: President, Raymond H. Fox, Altus and secretary, Earl W. Mabry, Altus.

McCLAIN COUNTY selected: President, I. N. Kolb, Blanchard; vice-president, W. C. McCurdy, Purcell; secretary, O. O. Dawson, Wayne; delegate, H. B. Slover, Purcell.

WOODWARD COUNTY elected: President, T. C. Leachman, Woodward; vice-president, H. Walker, Rosston; secretary-treasurer, C. E. Williams, Woodward.

BRYAN COUNTY elected: President, Roy L. Cochran, Caddo; vice-presidents, Albert S. Hagood and R. E. Sawyer; secretary-treasurer, B. B. Coker; censors, J. L. Shuler, R. E. Sawyer and H. B. Fuston, Durant.

MURRAY COUNTY elected: President, J. T. Wharton; vice-president, A. P. Brown; secretary-treasurer, Howson C. Bailey, Sulphur.

POTTAWATOMIE COUNTY elected: President, Robert M. Anderson, Shawnee; vice-presidents, Eugene E. Rice, Shawnee, R. C. Kaylor, McLoud, and J. Elmer Hughes, Shawnee; secretary-treasurer, William M. Gallaher, Shawnee, re-elected; censors, J. H. Scott and M. A. Baker, Shawnee. Dr. Horace Reed, Oklahoma, delivered the principal address of the meeting upon "The Surgical Treatment of Pulmonary Tuberculosis."

OKMULGEE COUNTY elected: President, J. P. Nelson, Shulter; vice-president, L. B. Torrance; secretary-treasurer, M. B. Glisman, Okmulgee; censor, F. E. Sadler, Henryetta.

UROLOGY and SYPHILOLOGY

Edited by Rex Bolend, B.S., M.D.
1010 Medical Arts Building, Oklahoma City,

Relieving Urinary Retention From Enlarged Prostate Without the Catheter.

The following discussion of relieving urinary retention due to the enlarged prostate is at least unique. This method might be effective as the author suggests over long periods of time and if there is no irritation after it might be a means of reducing certain inflammatory conditions in that area by the rest method.

While the method described is by no means impracticable still I imagine it would be, at times at least, overflowing the reservoir, so to speak, and I am wondering just what indicator one would use in knowing just when this was taking place.

"Pila de Pollazzi employs this method in cases of chronic incomplete retention of urine from an enlarged prostate without distention of the bladder. The enlarged prostate pushes the neck of the bladder upward into the vesical cavity. This results in the formation of a pouch behind the neck. It is in this pouch that the urine is usually retained. Pila de Pollazzi's method consists in filling up this pouch with a liquid to replace the residual urine. On experiments made in this field, oil of sesame was found to be the best liquid for the purpose; thirty-three parts of the oil are mixed with 100 parts of bromine. He finds that this fluid does not irritate the vesical mucous membrane, nor does it mix with nor disintegrate in the urine. The quantity of fluid introduced should be larger than that of the urinary residue. The injection is repeated every two or three months. Owing to the fact that the density of the fluid is higher than that of the urine, the latter rises, making possible the complete evacuation of the bladder. This renders catheterization superfluous."

Genito-Urinary Symptoms in Appendicitis.

According to Balustein, the following genito-urinary symptoms may occur in appendicitis: frequency of micturition, pain on micturition retention of urine, difficulty in urination, tenderness on pressure in the right costovertebral angle, hematuria, pain in either or both testes and retraction of the right testis.

While some may doubt these symptoms as arising with any degree of consistency during attacks

of appendicitis still every one of them may be accounted for during an attack and it is probably well for those interested in urology to call attention to this fact to the general man seeing much appendicitis in order that we might definitely determine whether it is a result of appendicitis or merely a coincident.

Early Symptoms of Neurosyphilis.

In the American Journal of Syphilis, Bluemel reports on the initial symptoms of 100 cases of neurosyphilis. Ninety-seven patients had positive Wassermann reactions of the spinal fluid. In the other three cases the diagnosis of neurosyphilis was clearly established by the history of syphilis, by the physical observations and by the subsequent course of the disease. Weakness or pain in the legs occurred in twenty two cases; strokes and spells in eighteen cases; numbness and tingling in thirteen cases; mental symptoms in twelve cases; eye symptoms in nine cases; abdominal symptoms in eight cases; cranial nerve symptoms in seven cases; chest pains in three cases; epilepsy in three cases; bladder disturbances in three cases; and weakness and tiredness in two cases.

Synovial Fluid in Arthritis and Syphilis.

Ten cases of arthritis occurring in patients with clinical or serologic evidence of syphilis were studied by Chesney, Kemp and Baetjer with reference to (a) abnormalities of the synovial fluid, (b) presence of treponemes or other micro-organisms in the synovial fluid as determined by rabbit and guinea-pig inoculation and by culture, (c) response to anti-syphilitic treatment and (d) roentgenologic observations. The cases represented various stages in the course of the infection, including two patients with tabes dorsalis and Charcot joints. From the response to treatment, the arthritis was regarded as syphilitic in origin in five, or one-half of the cases. From the synovial fluid of three of these five patients, strains of *Treponema Pallida* virulent for rabbits were obtained by inoculation of animals of that species. In four of these five, the synovial fluid showed a relatively high percentage of lymphocytes and mononuclear cells combined. No roentgenologic observations significant of syphilis were encountered in these patients.

CLIPPINGS FROM UROLOGIC AND CUTANEOUS REVIEW.

Do not aspirate the bladder suprapubically until percussion shows it to be well distended.

Treatment applied to "weak kidneys" never cured a bladder disorder due to mechanical obstruction.

Look out for a little thickening of the skin of the palms—keratosis—as an early sign of intolerance of arsenic.

An important differential diagnostic point in gonorrheal rheumatism is the practical absence of temperature.

Do not preach the doctrine of antecedent gonorrheal infection as the causative factor in prostatic hypertrophy. We don't know.

A rapidly growing tumor in the kidney region of a young child is highly suspicious of sarcoma. Operation to be successful must follow an early diagnosis.

A little patch of eczema anywhere on the body may reveal the existence of a gouty diathesis if it proves exceptionally stubborn to treatment.

In placing the drainage tube following a suprapubic prostatectomy be sure that the tube does not reach into the prostatic cavity. This must be permitted to contract.

Immediately X-ray a patient who complains of pain in one loin radiating downwards increased upon movement, even though hematuria is not present. Renal calculus.

Persistent friction, systematically carried out, will nearly always bring back the growth of hair on an alopecic patch. It must be combined, of course, with a rubefacient.

In frequency of micturition in women, always ascertain the state of the generative organs and determine the relationship between any abnormal condition and the frequency.

Do not let a day pass without finding out with positiveness the cause of a hematuria. The importance of securing such information is all the more obvious when we remember that blood in the urine is practically always the first token of vesical tumor.

When there is any doubt at all as to a bladder lesion, do not be satisfied with a single cystoscopy.

EYE, EAR, NOSE and THROAT

Edited by Jas. C. Braswell, M. D.
726 Mayo Bldg., Tulsa

Immature Cataract Operation for Use When Intracapsular Extraction Seems Inadvisable., Bagley, C. H., Surg., Gynec. & Obst., 1926, xlii, 698.

Wilmer's operative technique for pre-senile immature cataracts is described. The usual general examination includes studies of the blood chemistry and tests for sensitivity to lens protein. Patients exhibiting sensitivity to lens protein are immunized. A culture of the conjunctival scraping is made. The eye is irrigated and the adjacent parts are thoroughly cleaned the night before the operation, early the following morning, and just before the operation. The lashes are cut. Butyn is used as a surface anaesthetic, and just before the operation one instillation of 4 per cent cocaine with adrenalin is given. One per cent procaine with adrenalin is injected subconjunctively below the cornea. An iridectomy is done and the lens capsule massaged with a special instrument.

The postoperative care is that usually given. The patient leaves the hospital on the ninth day. Three weeks later extraction is done following the same preparation with the addition of an injection of 1 per cent procaine into the eyelids. The operation is typical, a portion of the anterior capsule being removed with a capsulotome. The

patient is discharged after from nine to fourteen days and returns six weeks later for refraction.

A New Technique for the Expression of the Cataractous Lens in Its Capsule., Smith, H.: Arch. Ophth., 1926, lv, 213.

Smith describes his original method of intracapsular extraction, delivering the lens upright and as a tumbler.

In the latter method, the lens is made to rotate about its transverse axis, the ligament being ruptured first below and the lower edge of the lens presenting in the wound. A new technique has been developed for this operation, which is recommended for all but soft swollen cataracts. The incision embraces a full 180 degrees. A smooth curved spatula is placed over the upper edge of the section, holding the cornea in its original position, with sufficient pressure to fix the upper edge of the lens. A squint hook is then placed on the sclera 4 or 5 mm. below the limbus and pressed toward the center of the globe. This sets up hydrostatic pressure within the globe, forcing the lens forward. Since it is held above, the lower edge advances, rupturing the ligament at that point.

When this occurs, the pressure is instantly relaxed. The posterior surface of the lens is gently followed up with the squint hook, pressing through the folded cornea. Delivery is complete by folding the cornea behind the lens, while pressure of the spoons is relaxed to avoid rupturing the capsule. The preservation of the ligament above is an effective barrier to loss of vitreous.

Smith believes that this method will replace all other forms of intracapsular extraction.

Late Results of Intracapsular Cataract Extraction. Knapp, A.; Arch. Ophth., 1926. lv, 257.

The author reports the late results in eighty-five of 200 cases of intracapsular extraction which were reported in the Archives of Ophthalmology in 1915 and 1921. Sixteen patients who died retained good vision up to the time of their deaths according to reports of their relatives. In fifty-seven, vision was as good or better after operation; five of these had had some vitreous loss. With the slit lamp the vitreous could be seen in the form of membrane, sometimes flat and sometimes projecting forward in a series of waves. When vitreous loss had occurred, this membrane was absent. Back of the hyaloid lay a definite gap, anterior to the limiting vitreous structure. The vitreous was much clearer than usual after capsulotomy extractions.

Three cases showed excessive proliferations of the vitreous extending into the anterior chamber, but these did not interfere with vision. Glaucoma was present in only one case and in this instance could not be ascribed to the operative method. In two cases of glaucoma with cataract in which intracapsular extraction had been done the tension returned to normal, but in one such case the glaucoma remained. Detachment of the retina was not observed in any case.

Postoperative detachment of the choroid always cleared up. Blood staining of the hyaloid was frequent after operation and often persisted for several months. Inflammatory reactions following operation were infrequent, although in two complicated cases there were posterior synechiae

to the hyaloid. These results are much better than would be expected from the capsulotomy method.

The Pathology of Deaf-Mutism., Nager, F. R.: Laryngoscope, 1926, xxxvi, 313.

Acquired deaf-mutism is the result chiefly of inflammatory processes in the labyrinth from meningitic, tympanic, or haematogenic causes. Meningitic labyrinthitis may follow epidemic cerebro-spinal meningitis, scarlet fever, measles, parotitis, typhoid, and hereditary syphilis. In such cases there is a new bone and connective tissue formation which sometimes may result in complete obliteration of the labyrinth cavities and absence of Corti's organ, the cells of the membrana tectoria, spinal ganglion, and nerve fibers. Skull injuries, intrapartum or postpartum, are the cause of acquired deaf-mutism only in the minority of cases. Tympanic labyrinthitis results from middle ear suppuration following scarlet fever, measles, etc. Histological examination discloses very extensive destruction even up to obliteration of the labyrinth and a cholesteatoma.

Endemic congenital deaf-mutism as seen in Switzerland is one of the signs of endemic cretinic degeneration. In this condition the pathological change affects the medial tympanic wall, causing marked hyperostosis of the promontory with a narrowing of the window niches and adhesions of the deformed stapes. In the cochlea there is a small hyaline body embedded between Corti's organ and the membrana tectoria. Except for the presence of this growth, the organ of Corti and the nerve fibers may be normal.

Cases of sporadic deaf-mutism the author classifies into three groups. In Group A are cases with complete absence of the labyrinth and pyramid. These are rare. In Group B are cases with slighter changes in the labyrinth confined to the neuro-epithelium of the scala media of the cochlea. To Group C belong cases with sacculocochlear degeneration. These constitute 70 per cent of the cases of sporadic congenital deaf-mutism with remnants of hearing.

ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M. D.
717 North Robinson St., Oklahoma City

Chronic Arthritis: Its Treatment with Emetin. Leonard W. Ely; Calif. and West. Med. xxv, 625, Nov., 1926.

Although admitting that the amoeba theory as a cause of arthritis has not been proven, the author holds that the areas of aseptic necrosis in the bone and reaction of the marrow around them indicate the presence of some living organism, the changes one would expect from protozoa.

He does not accept the idea of infection as an etiologic factor.

The routine treatment of chronic arthritis as carried out by the author is as follows: Emetin hydrochloride 0.065 intravenous daily for twelve days, followed by emetin bismuth iodide daily for six days. Neoarsphenamin weekly for three doses 0.45, 0.6 and 0.9 respectively. The neoarsphenamin is omitted in cases where no proteza are found in the stools.

Nausea, diarrhea, increase in pulse rate and fall in blood pressure are all indications for dis-

continuance of emetin, temporarily at least. Muscular weakness is a frequent symptom following emetin and, if in a severe degree, the emetin should be stopped.

Although a dangerous drug, affecting the heart, intestines and muscles, emetin, when cautiously and intelligently used, has a distinct value in treatment of chronic arthritis.

A synopsis of eighty-six cases is given, showing cures in two cases, improvement of all degrees in forty-six, improvement in sixteen and treatment stopped in twelve.

Acute Arthritis. A. Gibson. *Can. Med. Assn. J.*, xvi, 1033, Sept. 1926.

The paper is confined to the subject of acute arthritis. The surgical anatomy of the joint is dealt with first of all and it is pointed out that in every case the synovial membrane alone may bear the brunt of the fight. Experimental work on acute arthritis is reviewed. It has been shown that acute arthritis is more readily produced in joints already sensitized by the toxins of the streptococcus. The bearing of this obstruction upon the influence of focal infections is manifest.

The process may end in complete resolution, complete ankylosis, fibrous or bony, or it may become subacute or chronic. These are the cases which form a standing reproach to the profession. It is pointed out that in many cases the removal of recognized foci of infection merely means the locking of the stable door after the steed has vanished. The lymphatic glands may prove to be a lurking place for the responsible organism. There is much work to be done along this line.

Of the various types of infection, the gonorrhoeal, the pneumococcal, streptococcal and staphylococcal are considered in detail.

In regard to treatment, aspiration of the joint with bacterial and cytological investigation of the fluid is necessary to determine the relative importance of rest and movement. Painless movement is always useful. If possible, the pathological process should be limited to the synovial membrane. To accomplish this it may be sufficient to aspirate the joint, or it may be better to wash out the joint thoroughly as recommended by Cotton. The Willems method is then described.

The injection of strong antiseptic into a joint is looked on with disfavor. The use of mercurochrome or gentian violet is not likely to bring about dramatic results.

Fibrositis (Myalgia, Chronic Muscular Rheumatism). Chas. Hunter. *Can. Med. Assn. J.*, xvi, 1319, Nov., 1926.

Etiology. Many date the onset from some particular muscle strain, in others chilling of the body precedes and attack. The influence of infection is undoubted. In run down conditions muscular pains often appear which vanish with improvement of the general health.

Symptoms. The outstanding symptom is pain referred to muscles or tendinous insertions; the pain is present only when the affected muscle is thrown into action, and disappears on relaxation; the muscle is sensitive to direct palpation. In chronic cases, circumscribed thickenings may sometimes be palpated and are exquisitely sensitive.

The exact pathological nature of these nodules is a matter of dispute; they may be a true fibrositis, or a disturbance of the colloid constituents of muscular tissue, or a neuralgia of the sensory nerves in muscle.

In diagnosis a broad survey must be made for orthopaedic faults, while teeth, tonsils, sinuses, urethra and prostate must be examined. Torticollis, pleurodynia and lumbago should not be diagnosed without excluding other conditions. Gluteal myalgia is often diagnosed as sciatica. It may be acute and completely disabling or may be associated with aching and stiffness. Myalgia of the calf muscles must be distinguished from phlebitis and from peripheral neuritis. Occipital myalgia—the so-called “rheumatic headache” is seldom recognized. Brachial myalgia and myalgia of the abdominal muscles are frequently associated with trauma or strain.

Treatment. We must consider the individual generally; his mode of life, his state of nutrition, his occupation, etc. Games and exercises should be encouraged. Foci of infection should be removed. For chronic myalgia and even for subacute myalgia the sovereign remedy is massage. General massage is useless. Firm massage with the tips of the fingers combined later with friction and kneading is necessary to prevent recurrences. Usually the pain is lessened after a few treatments, but often persistent treatment for weeks is necessary to be of permanent value. Normal saline injections may be of some value, or novocain ½ per cent in 5 to 10 c.c. does may be employed. Diathermy or quartz lamp is of secondary value. In refractory cases, the patient becomes discouraged and neurasthenic so that physiotherapy must be combined with physiotherapy.

TUBERCULOSIS

Edited by L. J. Moorman, M.D.
912 Medical Arts Bldg., Oklahoma City

The Larger Field of Tuberculosis.

ALLEN K. KRAUSE.

Journal of the Outdoor Life, January, 1920.

The most important part of the fight against tuberculosis is education not only of the physician but of the entire population. Since newspaper “health” articles are so popular leaders in this work should utilize this method of educating the public and not leave this field to charlatans and hack writers as is usually done. Civic control of milk distribution and the development of a real taboo against promiscuous spitting must also be prominent features of any anti-tuberculosis fight.

No one of the many factors making for active tuberculosis should be over-emphasized but they should all be taken into consideration in educating the public. They should be taught that “Manifest tuberculosis is due to anything and everything that adversely influences health.” Valuable as is study and great as is the mass of professional knowledge they are useless unless they can be “put over” to “the man in the street.”

Surgical Treatment in Selected Cases of Pulmonary Tuberculosis.

HORACE REED.

Texas State Journal of Medicine, September, 1926.

While much attention has been paid in this country to the tuberculosis problem as a whole it

is only recently that American surgeons have taken up surgery in pulmonary tuberculosis.

The failures and limitations of artificial pneumothorax have had a large share in the growth of pulmonary surgery. Surgery is indicated in cases of advanced tuberculosis, with a predominantly unilateral involvement, which have been subjected to routine treatment without results and on whom artificial pneumothorax has been unsuccessful. This work requires the closest co-operation between physician and surgeon since the physician must select the cases and they must remain under his observation long after the operation has been completed.

There are three types of operation which may be used depending upon the needs of the patient—paravertebral thoracoplasty, phrenicotomy, pneumolysis, and parasternal thoracoplasty. The type of operation and the anesthetic used must depend on the needs of the individual patient.

Alexander reports 1159 cases of thoracoplasty all of which had far advanced tuberculosis; 36.8 per cent were cured and 24.4 per cent were improved. The mortality was 13.2 per cent during the first two months, later mortality not connected with the operation was 19.4 per cent. Brunner reports 35 cases operated in an earlier stage with 91 per cent favorable results, 40 per cent cured and 34 per cent bacilli free. The results in the author's small series of cases have been excellent.

It is thought that surgery could restore many more to a degree of health otherwise unlikely, if patients were submitted to it as soon as it became evident that satisfactory improvement was impossible under the customary routine.

Deduction Drawn From Eight Years Tuberculosis Work Among Negroes.

H. G. CARTER.

The American Review of Tuberculosis, Dec., 1926.

Up to eight years ago there were no beds for tuberculous Negroes in Virginia outside of those in the hospital for the insane and in the penitentiary. This delay in providing facilities for the treatment of the Negro was due to doubt as to whether the Negro leaders would back the work—also whether they would go to a sanatorium for treatment and partly due to a belief that the Negro did not have enough resistance to justify a sanatorium.

The first 30-bed unit was opened in April, 1918, and the beds were full inside of three months—they have 150 beds all filled at present and always have a waiting list.

In starting a sanatorium for Negroes a good clinic is of utmost importance, also the cooperation of the Negro leaders, especially the ministers. Educational work is extremely important and should be kept ahead of the growth of the institution—i.e. beds should not be added unless there is a demand for them. A waiting list should be kept from which the superintendent can pick cases, thus avoiding an overbalance of advanced cases with their inevitably high death rate. The employment of arrested cases to care for the sick and to do other sanatorium work has an excellent effect.

The work at the Piedmont Sanatorium has shown that the light mulatto has a much higher resistance to tuberculosis than the black Negro, also that while the resistance of the Negro is

much lower than that of the white man his disease is curable and he will accept sanatorium treatment under suitable conditions.

The Treatment of Tuberculous Lymphadenitis Among the American Indians.

R. J. COLLINS AND G. R. LESLIE.

The American Review of Tuberculosis, Dec., 1926.

Tuberculous adenitis, especially cervical adenitis has been common among the Indians as long as we have any record—it is mentioned as early as 1633. A committee appointed by the National Tuberculosis Association and the Bureau of Indian Affairs in the United States in 1921, found that unfavorable economic conditions caused by the coming of the white man and the destruction of game rather than any racial predisposition was the cause of the great amount of tuberculosis among the Indians. The introduction of cattle and the confinement of the Indians on reservations also played a large part in this almost universal infection. A great difference was found in the morbidity rates of various tribes—the better the living conditions, the lower the rate.

In a recent examination of 1346 school children in the Province of Saskatchewan, 92.5 per cent of the Indian children had positive tuberculin reactions with enlarged and discharging lymph nodes exceedingly common while 54 per cent of the white children had positive reactions with no lymph nodes large enough to justify a diagnosis of tuberculosis. In one Indian school 91.8 per cent had positive reactions. The herd supplying this school with milk was tested and 50 per cent of the cows were found infected.

Admissions of children with adenitis are frequent at the Jordan Memorial Sanatorium, River Glade, New Brunswick, Canada—these cases vary from many with only one node infected to very extensive glandular involvement. They are satisfactorily treated with sun lamp, x-ray and sun baths. Recurrences are common as the children return to their old living conditions on the Reservations.

Tuberculosis Hospitalization in the United States.

GODIAS J. DROLET.

The American Review of Tuberculosis, Dec., 1926.

Sanatoria have three major functions (1) to educate patients to protect others and to care for themselves, (2) to serve as special places for the recovery of health and to give humane care to the dying, (3) to protect the community by segregating foci of infection.

The death rate from tuberculosis in the United States in 1900 was 202 per 100,000—in 1924 it was 91 and held the fifth instead of the first place as a cause of death. In 1900 there were 4,485 beds for tuberculous patients—in 1924 there were 73,715. During this time the population had increased from 30,765,618 to 99,039,494. Even with this increase in facilities for caring for tuberculosis only 11 states have sufficient beds.

The average cost per patient week is \$21.60—the cost per week varies from \$10 to \$41—is lowest in New York and highest in California. The length of stay seems to depend on the type of care given—the better sanatoria losing only 7 per cent of their patients in less than one month while the poorer ones lose as high as 24 per cent in this time. Only 21 per cent remain in sanatoria nine months or more.

Of the total number of patients admitted in 176 sanatoria, 16 per cent were classified as incipient, 34 per cent moderately advanced and 50 per cent far advanced.

This would seem to indicate the need for better case-finding and social service work. One hundred and eighty-four institutions reported that 29 per cent had died in the institution, 23 per cent left unimproved, 42 per cent left improved or quiescent and 15 per cent were discharged apparently arrested. Few facilities exist at present for follow-up work and after care.

While improved living and working conditions and racial resistance have had their part in bringing about the steadily declining death rate from tuberculosis, hospitalization has undoubtedly been one of the outstanding factors in the control of this disease. This is shown by the fact that the three countries—New Zealand, Canada and the United States—having the lowest death rate, below 100 per 100,000, have the highest ratio of hospital beds available, from 7 to 9 for each ten deaths. Netherlands, England and Germany having the next lowest death rate have 4 to 5 beds for each 10 deaths, while in France, Czechoslovakia and Japan the available beds decrease from 4 in France to only 1 for each 40 deaths in Japan with a death rate of 213. New Zealand with a death rate of 51 has 9 beds for each 10 deaths.

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BOOK REVIEWS

The Practice of Medicine. By A. A. Stevens, M.D., Professor of Applied Therapeutics in the University of Pennsylvania. Second Edition, entirely reset. Octavo of 1174 pages. Philadelphia and London: W. B. Saunders Company, 1926. Cloth, \$7.50 net.

The second edition of this work is even much better than the first edition. It has been thoroughly revised and brought up to date and much new material has been added. The book is well arranged and the diseases classified and grouped according to etiology and the special anatomical systems. Very properly particular emphasis has been laid on the Symptomology and diagnosis of the diseases and the treatment has been made concise but ample enough, for as the author states he has omitted all that is controversial and has based most of this treatment on a long clinical experience. The work is an excellent reference book for the general practitioner and is a scholarly attempt of a great clinician to transmit some of his experience to his less fortunate fellows.—*R. A. Wolford.*

Human Pathology. By Howard T. Karsner, M.D. Octavo of 947 pages with 463 illustrations. J. S. Lippincott Company, Philadelphia.

There can never be too much written about Pathology and Dr. Karsner has written a well worth while addition to that already large field. It is divided into two parts. Part I deals with General Pathol-

ogy and Part II with Systemic Pathology. The work is abundantly and ably illustrated. The references are conveniently placed after each chapter and are very comprehensive. The text contains no controversial matter, is well arranged, and presented in a concise lucid manner. This book is an excellent reference manual for physicians, in general practice and all the specialties, and will prove a valuable addition to the medical subjects.—*R. A. Wolford.*

Life Insurance Medicine, New England Mutual Life Insurance Company, Vol. 1, 1926, 219 pages. Nathan Sawyer & Son, Inc., Boston, Mass.

This is a very commendable effort of the medical staff of a large insurance company to present to the medical profession their viewpoints of insurance risks. As almost every general practitioner does life insurance examinations, it is well worth his while to read this book. It consists of a series of monographs by different men and is well edited. The monographs on Glycosuria and the Cardio-Respiratory Test are particularly interesting.—*R. A. Wolford.*

A Manual of Pharmacology and Its Application to Therapeutics and Toxicology. By Thorald Sollmann, M.D., Professor of Pharmacology and Materia Medica in the School of Medicine of Western Reserve University, Cleveland. Third Edition; entirely reset; 1184 pages. Philadelphia and London: W. B. Saunders Company, 1926. Cloth, \$7.50 net.

It is doubtful if there can be found included in one volume so much information relative to the conceptions and actions of drugs as is included in this edition of Professor Sollmann's Pharmacology. The text has been thoroughly revised to include as much space as permits on such new drugs and preparations as insulin, ethylene, certain hormones. Newer conceptions upon lead poisoning, chemotherapy and the autonomic system has been given space. It will be found to be of the greatest aid to the student and the busy practitioner who must have at hand a comprehensive yet practical source of information upon drugs and their actions and applications.

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AMERICAN BOARD OF OTOLARYNGOLOGY

The following examination dates have been assigned by the American Board of Otolaryngology:

Washington D. C.—Episcopal Eye, Ear and Throat Hospital, Monday, May 16, 1927, at 9 o'clock.

Spokane, Washington—Saturday, June 4, 1927, at 9 o'clock.

CHAIRMAN OF SCIENTIFIC SECTIONS

General Medicine, Neurology, Pathology and Bacteriology. Chairman, Dr. Leonard C. Williams, Pawhuska; Secretary, Dr. L. A. Mitchell, Stillwater.

Eye, Ear, Nose and Throat. Chairman, Dr. Charles H. Haralson, New Wright Bldg., Tulsa; Secretary, Dr. Frank R. Viereggs, Medical Arts Bldg., Oklahoma City.

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SOME FEATURES OF GLAUCOMA IMPORTANT TO THE GENERAL PRACTITIONER.*

JOHN O. MCREYNOLDS, M.S., M.D.
DALLAS, TEXAS

In presenting a paper on this subject, it is far from my purpose to indulge in any criticism of the general practitioners, but rather to suggest an extension of their field of labor in harmony with their scientific attainments and well developed sense of professional responsibility.

On behalf of the ophthalmologists, I must express our profound appreciation of the generous spirit of the general practitioners in turning over to us so completely practically all of their work in ophthalmology. Much of this practice they could handle with splendid satisfaction and with only a small amount of additional preparation and effort. I have many times heard some of my friends of the general profession proclaim that they did not undertake any kind of eye work. This is surely a very liberal attitude, but I am going to make an appeal to the general profession to share with us more of this work and more of the responsibility. I am convinced that this would redound to the credit of the medical profession and to the benefit of the public. A man who can fathom the deep seas of serology, neurology, and internal medicine could add a very helpful service to practical ophthalmology if he would only divest himself of the notion that the eye is clearly beyond the domain of his proper activities. The matter of differential diagnosis in ocular diseases is sometimes an imperative call upon the family physician. He is the only one, perhaps, in a position to warn the patient of the perils confronting him. He is the one who must initiate measures of relief or overcome the error of placid inaction. It is his knowledge of the prog-

nosis in ocular affections that must give to the patient a measure of his danger and a measure of the reasonable hope he may cherish.

One of the most important ocular diseases involving the responsibility of the general practitioner is that of chronic glaucoma. Its significance depends upon the fact that it is exceedingly easy to confuse this condition with other intra-ocular changes not associated with pain or other distressing manifestations calling for immediate relief. Many times the patient depends upon his family physician to guide his conduct in the earlier stages of ocular affections, intending to submit his condition to an oculist at some later period. The great importance of chronic glaucoma, therefore, to the general practitioner hinges upon the fact that there may be some difficulty in the earlier stages in differentiating chronic simple glaucoma from some other conditions that do not demand such immediate attention. From a practical point of view, the mistake most frequently observed is in confusing a chronic simple glaucoma with incipient cataract or various changes in the fundus.

With reference to the first two conditions—chronic glaucoma and senile cataract—you might say that there are many points in the subjective manifestations that are quite similar, but the prognosis and treatment are so entirely different that an accurate differentiation is extremely necessary. In the first place, whatever ground is gained by a chronic glaucoma, as a rule, is permanently held, and, therefore, the important consideration is to prevent the advance of the glaucoma; whereas, in the matter of incipient cataract, uncomplicated, there is no great loss in the final result, even if there is considerable delay, and the patient may be able to secure perfectly useful vision whenever the lenticular opacities have advanced to a point that requires relief—in other words, glaucoma simplex requires early diagnosis and prompt attention to prevent

*Read before the Section on Eye, Ear, Nose and Throat, Annual Meeting, Oklahoma State Medical Association, Oklahoma City, June 22, 23, 24, 1926.

irrevocable damage; whereas, senile cataract can be attended to at any time that the patient requires additional vision. In considering these two conditions, we might divide the subject into two divisions: first, the subjective manifestations, and, second, the objective manifestations.

SUBJECTIVE MANIFESTATIONS

Under this head, we might consider, first, the element of pain, or physical discomfort. In both of these conditions there is practically no pain at any time, unless there should supervene on the chronic glaucoma an acute or subacute process, in which case pain would certainly be present. There is in each case a great deal of diminution in vision, but the character of this diminished vision will be likely to show certain characteristic features in each case. In chronic glaucoma there may be, not only diminished vision for the point of fixation, but even in advance of this there may be a marked contraction of the visual fields, so that the patient may preserve central vision for an indefinite period, while his field of vision is steadily contracted down to the point of practical annihilation of the visual field without the patient being aware of such an impending calamity. Cases of this kind will frequently go for a change of glasses and they may find that it is still possible to secure for them fairly acute central vision, and on this account they may be led into the error of thinking that nothing of a serious nature is transpiring in the globe; whereas, the eye may be undergoing destructive changes that cannot be remedied. In senile cataract, however, there is more of a general dimness throughout the visual field, the central area not being more affected than the peripheral zones. It is true that the exact amount of visual disturbances in senile cataract will depend upon the special form of cataract which is present. In some forms the opacity is fairly evenly distributed throughout the substance of the lens, while in other cases it may be confined to certain areas of the lens and, consequently, the vision will be impaired, especially under those conditions in which the rays of light are forced to pass through the lenticular opacities. It is also to be observed that there are certain subjective visual sensations in both of these conditions that are worthy of regard. In the case of glaucoma, in the event there should be subacute or acute exacerbation, there

would result certain modification in the dispersion of light, in consequence of which the rainbow rings, or haloes, would form around a lighted candle held at a distance. These subjective sensations are produced by a certain cloudiness of the cornea leading to the breaking up of white into its primary colors, or in producing elongations of the images formed by the entrance of light through the cloudy media. In the case of cataract, where the index of refraction is different in different sectors of the lens, it will be possible to have polyopia or multiple vision, due to the fact that this irregular refraction of the lens throws different images upon the retina. In neither of these conditions is there any notable inflammatory reaction or any discharge whatever. In each case, there is not much difference in the size, shape, or mobility of the pupil until visual acuity is reduced to a considerable degree.

OBJECTIVE MANIFESTATIONS

The objective manifestations are extremely important. In glaucoma simplex there would generally be a somewhat more shallow condition of the anterior chamber and the pupil would respond more sluggishly to the impressions of light. The ophthalmoscopic and perimetric examinations would constitute the most important features in the differential diagnosis. The ophthalmoscope would show a distinct recession in the plane of the lamina cribrosa. There would be the characteristic break in the retinal vessels as they would pass over the scleral rim of the optic disc. There would also be, as shown by the perimeter, a marked retraction of the visual field, and the dioptric media would remain clear; whereas, in developing cataract the dioptric media would be distinctly blurred, so that the details of the fundus could be less accurately outlined, but from the examination possible it would probably be easier to distinguish that there were no alterations in the nerve head itself, or in the blood vessels, but the fundus and the field of vision, as shown by the perimeter, would be unaltered. The intra-ocular tension, as determined by palpation, or a tonometer, would show no alteration whatever in the development of senile cataract; whereas, in glaucoma simplex, there would be a slight elevation in the tension, certainly at intervals, although there might be times when the intra-ocular tension would be normal. It is the slight increase in the intra-ocular pressure continuing for

a protracted period that explains the absence of pain and the diminished vision in glaucoma simplex.

In all of these cases, where it is desirable to make an ophthalmoscopic examination and a dilated pupil is to be obtained, it is necessary to use some myriatic whose action will rapidly disappear, such as euphthalmine, cocaine and homatropine, and, then, it is important to keep the patient under observation while the miotics are used to bring back the pupil to its normal size before allowing the patient to pass from observation, because whether the patient has already developed glaucoma or simply has a predisposition to it, the dilatation of the pupil may help to determine the onset of the condition, and, under such circumstances, a patient with senile cataract could have added to this malady, also, an attack of glaucoma. In all these cases, it is desirable to keep the patient under observation, because of the fact that the picture may change from time to time which would necessitate an alteration in the general management of the case.

It is beyond the purpose of this paper to enter into a discussion of the treatment, further than to state that in the case of glaucoma simplex, the treatment should be instituted at the very beginning and should consist either in the judicious employment of measures to reduce the tension by instillations of miotics, or recourse should be had to surgical measures intended to produce a freer filtration, these measures being especially the different forms of anterior sclerectomy.

With reference to senile cataract, the important consideration is that there is no necessity that the patient should be allowed to become blind with senile cataract in order to secure a successful result from operative procedures. The lens can be removed just as successfully at one period as at another, and the patient is entitled to the increased vision whenever he reaches a point where he is unable to discharge his usual duties of life.

ACUTE CONGESTIVE GLAUCOMA

Let us now study together the features of acute congestive glaucoma. Acute glaucoma is a condition of extreme importance, not only to the patient and the oculist, but the general practitioner as well, because the responsibility of making a correct diagnosis and instituting appropriate treatment, many times will devolve primarily upon the family physician. It falls to his

lot ordinarily to see the patient first, and it is in the early stage of acute glaucoma that the greatest good can be accomplished by an accurate diagnosis and by judicious management. There is no other condition that requires so imperatively correct treatment from the beginning, because, if incorrect management is employed, either in the way of active applications or a dilatory practice, disastrous results that cannot be overcome by any amount of subsequent diligence and care may speedily follow.

It is especially important that this condition should not be confounded with another condition with which, unfortunately, it is most likely to be confounded, namely, acute plastic iritis. The importance of this differentiation depends upon the fact that the treatment in these two conditions is diametrically opposed. In the case of acute congestive glaucoma, the great advantage to be sought is a speedy reduction in the tension, and this is accomplished most successfully by causing a marked contraction of the pupil, which results in pulling away the root of the iris from the filtration angle, thus opening up, to some extent, the spaces of Fontana and the Canal of Schlemm; while the object to be accomplished in acute plastic iritis is just the reverse—a speedy dilatation of the pupil to prevent permanent adhesions between the iris and the anterior capsule of the lens.

Let us now consider the important points of differentiation in diagnosis between acute congestive glaucoma and acute plastic iritis. The differential points may be considered under two general headings, the subjective manifestations and the objective manifestations.

SUBJECTIVE MANIFESTATIONS

1—Pain.—The pain in acute congestive glaucoma quite resembles that in acute plastic iritis inasmuch as the pain is distributed not only in the region of the eyeball and the orbit; but over the entire side of the head. However, the pain is much more acute in its character, much more rapid in its development, and much more extensive in its distribution in acute congestive glaucoma. It is frequently mistaken for a severe neuralgia, so the patient not infrequently comes to us with a history of having gone blind with neuralgia, when in reality he has gone blind with acute congestive glaucoma characterized by intense pain resembling neuralgia.

The constitutional manifestations are likewise more pronounced in acute glau-

coma. There may be a distinct depression with nausea and vomiting, which seldom occurs at the onset in acute iritis. In both of these conditions, the pain is deep-seated in character, because of the fact that it is produced by pressure upon the deep-seated sensory nerves of the globe, and is in marked contrast with the superficial, scratching pains that are present in conjunctival inflammation. While the pain is excruciating, the sensitiveness of the cornea to the touch of the finger is rapidly reduced in acute glaucoma, because of the paralyzing pressure upon the sensory nerves, but the sensitiveness of the cornea to the touch is preserved throughout the course of acute plastic iritis.

2—Vision.—The vision is speedily reduced, or actually annihilated, many times within a few hours, in cases of acute congestive glaucoma, on account of the rapid development of increased intra-ocular pressure interrupting the circulation within the globe, exerting marked pressure upon the optic nerve fibers as they come through the lamina cribrosa, and also by producing an edema of the cornea and a cloudiness of the other dioptric media. The vision in acute iritis is slightly diminished by the accumulation of plastic exudates in the line of vision, but this result does not rapidly supervene. In addition to the loss of central vision, there is frequently a reduction in the field of vision in acute glaucoma, which may be made out in the earliest stages of the trouble, particularly if there have ever been preceding acute attacks, or a preceding chronic glaucoma. This reduction in the field of vision may consist in a concentric limitation of the field with a special reduction on the nasal side, or with various forms of irregular scotomata. It may also be observed that in looking at a lighted lamp in a room, for instance, the patient may distinguish a kind of halo around the light somewhat resembling the appearance of a street light as looked at through a frosted window pane on a winter night. This halo is due to the cloudiness of the cornea produced by the edema consequent upon the intra-ocular pressure, and it may assume the appearance of rainbow rings around the light.

3—Discharge.—There is no purulent, or muco-purulent discharge, as an essential feature of either acute glaucoma or acute iritis, because the pathological process is intra-ocular rather than extra-ocular.

However, there is in both instances a profuse flow of tears.

OBJECTIVE MANIFESTATIONS

In both of these diseases the eye is intensely red, but in acute glaucoma there is a more marked distinctness of the episcleral veins and anterior ciliary veins, so that they stand out in bold relief because of the interference with the return circulation occasioned by the intra-ocular pressure. The eye assumes a kind of purplish hue on account of the venous stasis. In acute iritis there is more of a diffused pink color surrounding the limbus and extending over the globe. In acute glaucoma the cornea rapidly assumes a steamy appearance, resembling a pane of glass that has been breathed upon, while in acute iritis the cornea remains perfectly clear. The pupil in both cases is relatively immobile, but is especially so in acute glaucoma, and in this condition is widely dilated, while in acute iritis the pupil is inactive but contracted, unless a mydriatic has been used, in which case the iris will show adhesions to the anterior capsule of the lens, giving an irregular outline to the margins of the pupil. The anterior chamber in acute glaucoma is much shallower than normal and may be entirely obliterated, the iris and the lens pressing against the cornea, while in acute iritis the depth of the anterior chamber is unaltered. If the media are sufficiently clear to permit of an ophthalmoscopic examination, the fundus in acute glaucoma will show some reduction in the caliber of the retinal arteries, with a marked increase in the caliber of the retinal veins, which are distinctly tortuous in their course, on account of the interference with the return circulation. There may be hemorrhages, also, especially of the venous type in acute glaucoma, and these are unusual in acute iritis. The optic discs, in acute glaucoma, if the condition has supervened upon a more or less chronic trouble, will show a marked excavation which is total in character and presents characteristic features that distinguish it from other forms of excavation of the optic disc. The entire lamina cribrosa is pushed backward by the intra-ocular pressure, so that the retinal vessels appear broken in their course over the rim of the sclera, while in atrophy of the optic nerve, there is a pallor of the disc and a slight diminution in the prominence of the disc, but with no actual recession of the lamina cribrosa. In a physiological excavation of the optic disc, the central

portion may appear deeply excavated, while the peripheral portions, containing the normal number of normal optic nerve fibers, will show no such depression.

The essential condition of acute congestive glaucoma is the increase in intra-ocular pressure, and upon this one circumstance develop all of the symptoms enumerated. The eyeball may vary in hardness from a very small increase, capable of being appreciated by the touch, to those cases of extreme hardness in which the eyeball is apparently hard as marble. This intra-ocular pressure is variously estimated, by palpation with the fingers, or, more accurately, by a tonometer, which measures in millimeters of mercury the intra-ocular tension. In acute plastic iritis there is no increase of importance in the intra-ocular pressure.

If I should utter a single sentence that would emphasize most the dangers of this condition, I would say that whenever a patient becomes suddenly blinded, or has his vision rapidly reduced, associated with pain radiating to the brow, the temple, and the side of the head, with a dilated pupil, with a shallow anterior chamber, with haloes around the light, and with increased intra-ocular pressure, caution the patient to secure at once not dilatation of the pupil, but a contraction of the pupil, and follow this up with a careful investigation into the exact condition. Finally, in all cases of diminished vision, no time should be lost in ascertaining, as accurately as possible, the exact situation, so that remedial measures may be adopted promptly and not indefinitely postponed in the vague hope of better days.

It is a matter of the utmost humanitarianism and economic importance to secure vision for a patient when it is possible to do so rather than have the patient spend the final years of life in the fruitless waiting for complete blindness. This protracted delay simply results in the loss of general physical strength and endurance, so that when the patient finally reaches the stage of complete blindness he may be so enfeebled by the various infirmities of age that he is not in so favorable a condition for any kind of operation, and has such a poor remnant of life left that he may not have the courage and confidence and strength to undergo an operation for the restoration of sight, and thus, hesitating on the brink of the grave, passes on from the darkness of this world into the deeper darkness of the great unknown.

THE CARE OF CRIPPLED CHILDREN IN OKLAHOMA*

EARL D. MCBRIDE, M. D.
OKLAHOMA CITY

Rehabilitation of the cripple is a fascinating and worthy enterprise which has attracted the interest of civic clubs and organizations anxious to accomplish some unselfish good to humanity.

Popularity of the movement began in 1916 when a Rotary club in Ohio became interested in a twelve year old boy with prenatal amputation of arms and legs. The result of their efforts was a state society for crippled children and a state law providing for special facilities of treatment and education. At the present time, more states have enacted special legislation and there are over fourteen state societies for the relief of crippled children.

While the social clubs are to be given credit for promotion and execution of this work, it should be recognized that the basis on which they have worked, is the attainments of the medical profession.

The object of this paper, therefore, is to place before the profession first hand information of the present status of the crippled children's movement in this State.

It is hoped that the physicians in each locality will feel their responsibility in helping to construct, perfect and direct this movement so that it will remain non-sectarian and non-political but medically controlled. What a great opportunity to demonstrate the charitableness of the profession.

It is estimated that there are over 7,500 crippled children under 21 years in Oklahoma. Where clinics have been held, it is surprising to all concerned how many cripples there are in the community, and how few can afford to pay for treatment.

The movement in Oklahoma was started in 1920 by the Oklahoma City Rotary club. Through the activity of their boys' work committee, several crippled boys were operated upon and the results were so spectacular to the layman's mind that enthusiasm soon spread.

In 1922, the Andrew Parsons school for cripples was organized as a part of the

*Read before the Section on Obstetrics and Pediatrics, Annual Meeting, Oklahoma State Medical Association, Oklahoma City, June 22, 23, 24, 1926.

Oklahoma City public school system by the superintendent whose name it bears.

In 1923, the legislature passed a law which makes it possible for the juvenile judge in any county to commit indigent crippled or defective children under 18 years to the University Hospital for free treatment.

Early in 1924, the Oklahoma State Public Health Association added a "Crippled Children's Division" to its activities. With the aid of orthopedic surgeons and physicians in each locality, clinics were held in various cities in the state. The number of children coming to these clinics was so surprisingly great that state-wide interest soon became apparent. Civic clubs throughout the state began to request clinics. The Rotary club at Ardmore undertook the work on a large scale. Seventy-five children were examined the first day. The efforts of this one club has resulted in over 150 children being examined, 70 of which have received surgical or other treatment. In 1925, the Shrine hospitals were opened and Oklahoma children immediately began to apply for admission.

Due to the intense interest in the work and because so many different agencies were attempting the same work, it became necessary to formulate some plan whereby all working units could be brought together under one head and thus on September 24, 1925, the State Society for Crippled Children was organized.

The object of this Society is to:

1. Find the cripples.
2. Bring them medical, surgical and hospital, also social service care.
3. Educate them in school, home or hospital.
4. Follow up the cases until self supporting.
5. Lead State to more efficient government program.

Clinics have been held at: El Reno, Clinton, Nowata, Bartlesville, Cushing, Ardmore, Stillwater, Chickasha, Kingfisher, Waurika, Duncan, Poteau, Stigler, Sallisaw, Pawnee, Pawhuska, McAlester, Bristow, Chandler, Sapulpa, Guthrie, Cleveland, Drumright, Shawnee, Norman, Lawton, Muskogee and many other cities.

These clinics are limited to those physically handicapped by deformity or disabled by physical malformations and defects. They exclude the diseases of the internal organs and the blind or deaf. Many such cases, however, come anyway and are examined.

Age is not strictly limited. In fact, one very important feature is the possibility of rehabilitation of disabled young adults through the medium of the vocational rehabilitation act of the Federal government which was passed June 2, 1920. Under this act the Federal government provides the state with a sum of money which must be matched by the State and handled by the State Board for vocational education. Unfortunately, Oklahoma has not matched this fund but the State director is aiding materially in the clinics and managing to help many individuals to receive treatment and education.

Records of the clinics show that infantile paralysis is the most frequent cause of deformity. Next in frequency is, spastic paralysis. In this group are always a great number of imbeciles and feeble minded for which nothing can be done except advise as to care.

A very noticable feature of these clinics is the scarcity of rickets and joint tuberculosis. The frequency of these two groups is much greater in the large eastern cities. In Chicago, 7 per cent of 1500 cases examined was tuberculosis.

While the following table is a tabulation of only a portion of cases examined, it represents the percentages as generally found in all clinics.

	Cases	Per- cent
Total number of cases	702	
Total number of clinics	20	
Total number of counties	17	
Infantile paralysis	193	27.4%
Spastic paralysis	110	15.6%
Congenital club foot	35	5. %
Tubercular joints	28	3.9%
Osteomyelitis	21	2.9%
Fracture and traumatic	20	2.8%
Cleft lips and palate	18	2.5%
Arthritis	16	2.2%
Bowleg and knock knees	10	1.2%
Congenital dislocation hips	7	.9%
Weak arches	7	.9%
Congenital malformations	7	.9%
Burn contractions	6	.8%
Obstetrical paralysis	4	.5%
Torticollis	4	.5%
Idiopathic scoliosis	4	.5%
Hernias	3	.4%
Miscellaneous orthopedic	45	6.4%
Miscellaneous non-orthopedic	164	23.3%
Cases that can be definitely improved by orthopedic treatment	358	50.9%

The work of the society has only begun. It is rapidly creating state wide interest in rehabilitation of the cripple. Adequate hospital and school accommodations will soon become a real problem. At present, legislation provides only one means of institutional accommodation. This is the State hospital located over 200 miles from some parts of the state and primarily a general hospital. It has served well so far, but the time has arrived when one centralized hospital is no longer sufficient accommodation for these orthopedic cases.

The greatest number of cases can be reached by taking the surgery to the child. It is conceded, of course, that the majority of these cases must fall to the lot of the orthopedic surgeons. There are many good modern hospitals throughout the State and either orthopedic centers will have to be established where orthopedic surgeons of known experience and judgment can be in control of the work, or a mobile unit will have to be provided which can work from one hospital to the other.

At the clinics, the hopes of the parents are built up and operations are recommended. It is difficult in many instances to overcome the natural fear of surgery. If on top of this the parents know that they will have to send their child miles away, it is entirely out of the question with a great many.

In several instances, it has been found that parents too poor to pay surgical or hospital fees, have spent more than these would amount to, for railroad fare and board and room so that they could be near their child.

Another great problem confronting this society is the after care and education. The law should provide specially trained orthopedic nurses to investigate post-operative cases. It should also provide for a special department and teacher in every public school where 10 or more crippled children are in attendance.

CONCLUSION

1. The bringing to light of hundreds of crippled children in the State of Oklahoma is a movement of tremendous economic value as well as a true humanitarian activity.

2. Through the accomplishments of medical science, the attitude towards cripples has been changed from that of scorn,

superstition and pity to that of respect, recognition and title.

Note: Since the above article was written special legislation has been enacted appropriating funds for the erection of a children's hospital in connection with the State University Hospital, and the law providing for the care of indigent crippled children changed so that other hospitals than the University hospital will be permitted to care for these cases. Under the law, all hospitals or orthopedic surgery will have to be approved by the faculty of the medical school. It carries a tenth mill county tax to create a fund for the aid of crippled children. The surgeons will receive no pay, but the hospitals will receive \$15.00 per week to cover cost of all materials, braces, and other costs of treating the patient.

THE PERINEAL PROSTATECTOMY*

BASIL A. HAYES, M.D.
OKLAHOMA CITY

The surgery of the aged is fraught with many difficulties, most of which center around defects of the kidneys and cardiovascular system. This being true, any pains taken to reduce the amount of shock in operations on old people is well worth while. However, self-evident these statements may be, the fact remains that in prostatic surgery the medical profession appears to disregard them and to follow the most dangerous way for the patient. There is a nationwide mortality in operations for hypertrophied prostates of around ten per cent. The very best available figures for the suprapubic operation show a mortality of six per cent and over, while the best available figures for the perineal operation reveal a mortality of 3.1 per cent or exactly one-half the rate of the suprapubic operation. Yet in spite of this greatly lessened death rate, the suprapubic operation is almost universally used.

It is my desire today to present a small series of ten cases who have been operated upon by me by the perineal operation of Dr. Hugh H. Young, within the past nine months, all of whom have recovered, and none of whom at any time were in the slightest danger of death or even of suffering any more pain or inconvenience than they suffered before operation. These patients were all operated in the department of urology at the University hospital, and I am indebted to Drs. Wallace, Bolend and Taylor for their kind co-operation and assistance. Schematically the cases are as follows (Fig. 1):

*Read before the Section on Genito-Urinary, Dermatology and Radiology, Annual Meeting, Oklahoma State Medical Association, Oklahoma City, June 22, 23, 24, 1926.

TEN PERINEAL PROSTATECTOMIES

No.	Age	Residual	Blood Chem.	B. Press.	Preoperative Complicating Conditions	Operation (Stages)	Postoperative		Results
							Continued in	Wound Healed in	
1	82	3. oz.	38.2 NPN 17.8 UN	120 60	Age; carcinoma of prostate.	2 (Later Keys Operation)	7 mos.	30 da.	Cured.
2	60	4. oz.	32.1 NPN 15.8 UN	100 60	Anemia 3,600,000; large bilateral hernias; large right hydrocele.	2	42 da	Still open (Rectal inj)	Cured, except for pinhole fist.
3	73	6. oz.	28.5 NPN 13.9 UN	160 90	Nephrolithiasis; pyelitis; bladderstone.	2	22 da.	42 da.	Cured.
4	69	3.8 oz.	10.0 NPN 42.5 UN	126 68	Severe urinary retention. (Cautery punch wice.)	1(s)	24 da	24 da.	Cured.
5	71	2. oz.	46. NPN 14. UN	(?)	Very feeble and asthenic.	1	14 da.	28 da.	Cured.
6	61	(?)	47.6 NPN 14.1 UN	120 75	Large ventral hernia with infected fistula from bladder in it	2	16 da	32 da.	Cured.
7	56	4. oz.	36.1 NPN 12.6 UN	140 78	None except poor mental attitude.	1	7 da.	29 da.	Cured (Epididymitis)
8	60	1. oz.	40.6 NPN 23.3 UN	100 62	Large right inguinal hernia	1	25 da.	30 da.	Cured (Epididymitis)
9	66	1.5 oz.	32.3 NPN 14. UN	130 88	Cardiac lesion	1(s)	16 da.	16 da	Cured.
10	63	2. oz.	42.8 NPN 17.28UN	114 72	None	1(s)	16 da.	20 da.	Cured.

Fig. 1.

(S) Sacral anesthesia.

It will be observed that only four of these cases were operated in two stages. One of these had the bladder opened for the removal of a large stone, and the other three were drained preparatory to suprapubic operation before they fell into my hands. In three cases, however, the fistula had closed before I did the perineal operation, and the patients had not at any time gotten into good enough condition to warrant the enucleation of the prostate through the bladder. All the other six were operated in one stage through the perineum. Seven of them were given general anesthetics, and three were operated under sacral anesthesia, which to my mind is the method of choice, and is a perfect method of anesthesia when the technique is carried out strictly. One patient was eighty-two years of age and very weak; one had a large stone in the bladder and two other stones in the left kidney; two had extremely large bilateral inguinal hernias; one had a heart lesion with a history of decompensation; one had a very large ventral hernia in the lower part of which was an infected sinus leading to the bladder; two others were so feeble and septic that it was the opinion of all consultants that they could not stand an ordinary prostatectomy; and two were apparently in fair enough condition to stand a two stage suprapubic operation. In other words, out of the ten cases, only two could have been

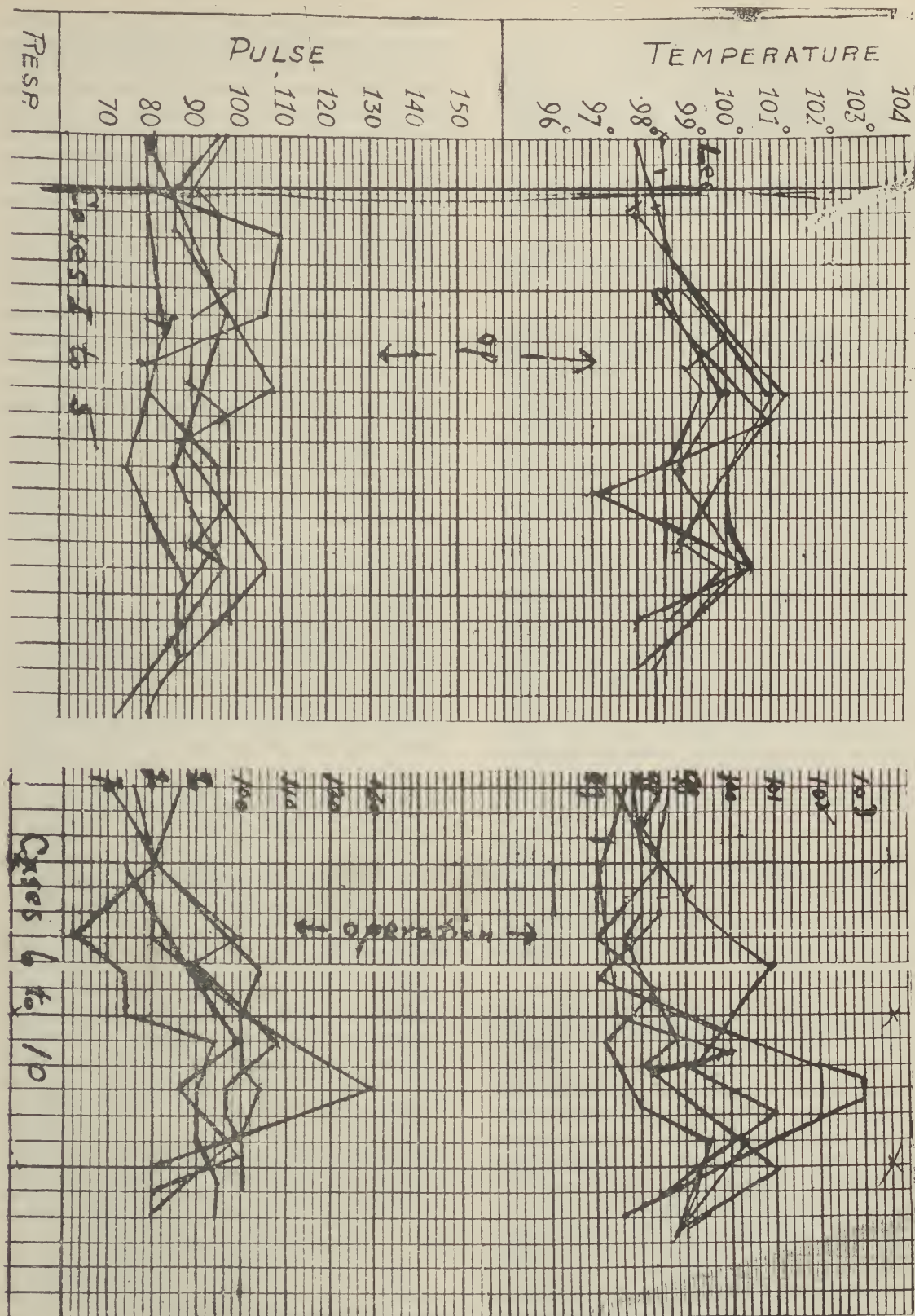
called fair risks from an operative standpoint.

The results in these cases may be stated as follows: Nine have recovered completely, the wounds closing in from two to four weeks. One has recovered except for a small recto-urethral fistula which he refuses to have repaired because it does not trouble him enough. The injury to the rectum was due entirely to improper arrangement of the operating table, which made it difficult to see just what I was doing. I feel perfectly certain that such an injury will not happen again, and I also know that I can repair that one under sacral anesthesia with very little suffering or loss of time to the patient if he will return to the hospital.

During convalescence two of the patients developed an acute epididymitis which lasted about one week and subsided without further trouble.

Only one case showed any incontinence following operation, and that was the eighty-two year old man. After letting him go for awhile I dissected the scar tissue loose and repaired the perineum by the Keys method and he promptly regained control and went home well.

None of these cases showed at any time any shock or undue hemorrhage, as can be seen from the following pulse and temperature charts. (Fig. 2)



DIAGNOSIS

From the standpoint of safety to the patient there are certain things to know about his condition besides the mere fact that he is suffering from urinary obstruction. We must determine, if possible, two things:

(1) The shape, size and consistency of the prostate, and direction of greatest enlargement.

(2) The amount of urinary retention and loss of functional efficiency of his kidneys.

The first points can be determined by rectal examination and cystoscopy. Many times rectal examination reveals comparatively little while inspection of the interior of the bladder will show a large intravesicular mass which towers up above the floor of the bladder. The consistency can be determined by bimanual examination, with one finger in the rectum and the cystoscope in the bladder. In carcinoma the mass is usually hard and adherent to the rectum and sides of the pelvis, whereas in benign conditions it is moderately firm but soft. The dividing line between benign and malignant is dangerous territory to be dogmatic about, and in case of doubt it is my judgment that enucleation should be undertaken. To say that a diagnosis of malignancy can be established or disproved by a sugar tolerance test or other laboratory test is foolishness; and certainly no one will maintain that he can tell for certain merely by the feel except in far advanced cases. Since the best authorities teach that from ten to twenty percent of all prostatic tumors are malignant, it is best to consider all of them as dangerous and to remove them as soon as they cause sufficient symptoms to justify operation.

The amount of urinary retention can be determined by catheterizing after the patient has voided all he can. If there is as much as 300 or 400 c.c.'s he is getting on dangerous ground and should be considered as one who needs attention. In a clinical sense residual urine is the measure of back pressure on the kidneys, because there can be little residual unless there is intravesical bulging of the prostate, and the more bulging the more residual. Likewise, however, the more bulging the more rigid the internal sphincter becomes and the greater the trigonal muscles hypertrophy, which in turn block the openings of the ureters and cause back pressure on the kidneys. The amount of

kidney reserve is a very important matter and must be determined before operation, if possible. The two methods that have been developed in the last few years and have proved to be of value are the Phenol-sulphonephthalein test and chemical examination of the blood for retained urinary products. Any good kidney ought to begin excreting PSP dye in eight to ten minutes after injection, and ought to excrete fifty per cent or more the first hour. It has been shown, however, that excretion beginning in fifteen minutes and excreting as much as thirty per cent the first hour indicates that the kidneys will stand operation fairly well in the absence of other complications. Blood chemistry usually reveals urinary retention in inverse ratio to functional efficiency of the kidneys, and therefore ought to be taken in all cases. It has been shown by Young and others that a blood urea of fifty mgms per 100 c.c.'s is not too high for successful operation, though any figure above this is on the borderline of danger. The lower this figure can be gotten, the better.

The presence of infection is another matter to be determined beforehand. It is decidedly poor surgery to open up large areas of raw surface in the presence of severe infection, when by preliminary treatment this can be reduced in intensity. The presence of pus or of foul smelling alkaline urine is clear evidence of infection in the bladder and urethra, and the absence of these elements indicates that the field of operation is clean. Infection in the ureters or kidney pelves can only be determined definitely by cystoscopy.

In arriving at an opinion as to the safety of operation at any given time it is well to remember that it has been shown that even a low PSP that is fixed is better than one in which the percentage fluctuates widely at different tests. Fluctuating functional efficiency means an irritable kidney and a dangerous one; while a fixed rate of excretory ability means that the kidney lesion has reached a quiescent stage and is not likely to flare up under the provocation of a heavy operation. It is well to defer operation in all cases until such a state of equilibrium is reached in both the PSP and blood urea determinations.

PRELIMINARY TREATMENT

This may be outlined very simply and easily. The whole principle is to gradually decompress the kidneys by relieving the residual urine and providing a means of free drainage so that the sudden open-

ing up of the bladder at operation will not throw the patient into a state of uremic shock which he cannot survive. The first thing to do in all cases is to install a retention catheter as soon as it is safe to do so. If there is a large amount of residual urine or if there is acute urinary retention this cannot be done until the urine has been gradually removed over several days. In some clinics this is done by intermittent catheterization of small amounts—five or ten ounces every hour in acute retention, leaving the catheter in but closing it up between intervals. In moderately large amounts of residual urine it is safe to draw off all the urine once or twice a day for three days, then insert the retention catheter. All cases meanwhile should be placed on a forced water diet of at least one glass per hour. In large residuals Dr. Young places a retention catheter with a long tube which is elevated so that the bladder empties uphill. Then he forces water to the extent of five or six litres daily, gradually lowering the tube until the patient can stand free drainage. By this plan of procedure he has obtained marvelous results,—many cases coming into the hospital in a state of coma and surviving to be operated on safely. By taking daily blood chemistry determinations the progress of the patient can be watched with almost mathematical accuracy.

Retention catheters should be removed every three or four days and left out for six hours, while the bladder should be irrigated daily with boric acid solution or other mild disinfectant. Infection is always present to a small degree and these measures help to keep it to a minimum. On the day of operation it is well to wash the bladder thoroughly with the same solution just prior to operation. In unconscious cases water should be given per rectum, subcutaneously, and by gastric lavage. The urine should be kept alkaline by the administration of sodium bicarbonate along with the water. Cases complicated by high blood pressure, cardiac lesions or other extrarenal pathology, should be handled in accordance with medical common sense until fit for surgical intervention. In general it may be said that a prostatectomy properly done is no harder on the patient than any other major operation.

TECHNIQUE (Figs. 3 to 18.)

Probably you are all familiar with the general principles of the technique. In brief, however, it is this: The patient

is placed in an exaggerated lithotomy position, with the knees brought well up to the chest. His perineum is then elevated by a sand bag and the entire table is tipped backward so as to bring the perineum almost level. This position is maintained by rigid shoulder braces which prevent the patient from slipping away from the operator. Under anesthesia, preferably sacral, a curved U-shaped incision is made across the perineum running from the outer border of each ischiorectal fossa to the other, with the middle of the incision about one inch anterior to the anus. The incision is not made, however, until a moderately large sound has been passed into the prostatic urethra and held by an assistant. By blunt dissection with the fingers the incision is deepened on each side until the fingers meet under the central perineal tendon, which is then cut and retracted. This exposes the rectourethralis muscle, which is gently dissected apart by the finger covered with gauze. This exposes the membranous urethra and the apex of the prostate. Just now the sound should be passed into the bladder, which throws the prostate downward into the wound, where, with the triangular ligament retracted forward and the rectum backward, the gauze dissection can be continued until the entire posterior surface of the gland is cleaned off and comes into perfect view. This dissection is continued until the whitish second layer of Denonvilliers' fascia appears, which is the true capsule of the prostate. Now, with all bleeders stopped, a median incision is made in the posterior portion of the apex of the prostate about one-half inch long until the urethral sound shows through. This incision is lengthened until each side of the urethra can be grasped with Allis forceps, the sound is withdrawn, and Young's prostatic retractor is slipped into the bladder through this opening. The blades of the retractor are opened out and the prostate is pulled down into the wound for enucleation. The next step is to open into the prostatic capsule and shell out the adenomatous tissue, and for this purpose I have used the inverted V incision of Young, turning the floor of the urethra downward, and enucleating each lateral lobe first, then the posterior one. A finger is then inserted into the bladder and swept round and round until the operator is assured that all the adenomatous masses are removed, then a Davis modified Pilcher bag is inserted and filled with 75

c.c. of sterile water. Gentle pressure on the bag will stop all ordinary bleeding, after which the wound is closed with interrupted silkworm gut sutures.

POSTOPERATIVE TREATMENT

The inflated bag is deflated twelve hours after operation and if there is no bleeding it is removed in twenty-four hours by simply cutting one suture and pulling it out. This is perhaps the most painful part of the entire operation, if I may believe what these patients have said,—though it is not great, and is over in an instant. At the end of a week water is forced through the anterior urethra and out the wound by an ordinary syringe, and if it will not go a sound is gently passed into the membranous urethra to open up the point of adhesion. Urine drains through the wound for two to three weeks then ceases as the perineal fistula closes. The patient gets up on the fourth or fifth day and then is able to change his own dressings often enough to keep dry. As a matter of fact there is no real reason why he could not go home and convalesce after ten days have elapsed, provided he could report to the doctor once a week for observation.

COMPLICATIONS, DANGERS, ETC.

The only complication that is to be feared is epididymitis, and so far as my own observation has gone, it is as common after suprapubic operations as after perineal ones. There have been two cases among this series, who ran a fever and had an enlarged scrotum for about a week, then it subsided and there was an end to it. I do not consider this a complication of any particular importance. There has been a great deal of criticism of this operation in the past on the ground that it was more likely to be followed by incontinence, rectal injuries and permanent urinary fistulæ, than the suprapubic method. If I may be permitted to say so, it is my frank opinion that any surgeon whose operations are followed by these sequelæ simply does not do the operation correctly. The only case of incontinence I had was the very first one I did, and the patient was eighty-two years old at that. After I allowed him to go home and fatten up and he still was incontinent, I dissected the scar tissue from between the rectum and urethra and brought the levator ani muscles together in the midline, as described by Keys, and he promptly got well. In this case the trouble was that I dissected too far forward on the urethra and the external sphincter muscles were caught in the scar

while healing. After I learned the anatomical bearings of the male perineum I had absolutely no further trouble. The same can be said of the case who had a fistula. This was caused by my assistant pressing down on the rectum too hard with the retractor in order to help me to find the urethra,—which would have been entirely unnecessary if we had placed the patient properly on the table. All this we have now learned, and consequently do not fear at all.

On the other hand, there are numerous advantages to this operation which are not usually stressed. First, it can be done under sacral anesthesia without any pain at all, which is a great advantage when we are dealing with very feeble patients or those who have cardiac or pulmonary complications. Second, it causes practically no shock, as you will see from the diagram of pulse and temperature following operation in these cases. Third, there is absolutely no danger of primary hemorrhage, because all the work is done in plain view and the vessels can be ligated. Also, the Davis bag gives a much better downward pressure against the bleeding area than the Hagner bag with its outlet running through the urethra. Fourth, there is less danger of trauma to the bladder and the prostatic urethra by the perineal operation than by the blind suprapubic enucleation. Fifth, this method keeps the patient in the hospital a much shorter time than the two stage suprapubic, and causes much less pain to the patient. The pain from a suprapubic incision is as great as that from any other abdominal incision, and after urine drains out of the wound for a time it becomes raw and irritated and is painful for weeks afterward. Some of these patients came through without a single hypodermic. Lastly, one operation does the work and the patient is cured, whereas, by any other method he must have the unpleasant prospect of looking forward to a deadly and serious operation later, where even in selected cases one out of ten will die. By this method we can assure the patient that he will suffer little or no pain during or after the operation, that he will have only one operation and will be away from home only three or four weeks at the longest, that he will be in bed only about four days of that time, that he can keep himself clean and comfortable, and that he has as good a chance of living as he would have if he were merely having his appendix or tonsils out.

ACUTE NON-TUBERCULOUS ILIO-PSOAS ABSCESS*

✓
 LEROY LONG
 AND
 LEROY DOWNING LONG
 OKLAHOMA CITY

Our remarks shall be confined to one particular type of extraperitoneal infection—namely that produced by pyogenic organisms in or about the ilio-psoas muscle, usually terminating in abscess formation.

All purulent collections in and about the ilio-psoas are not due to secondary involvement through the inclined plane and gravity, but may be the result of primary involvement of this muscle.

One of us, Doctor LeRoy Long, has studied this condition for several years, and his observations lead us to believe that abscess formation due to pyogenic organisms may, and frequently does, occur in and about the ilio-psoas as an independent process. In a communication read before the Surgical Section of the Southern Medical Association in November, 1924, and published in the Southern Medical Journal in March, 1925, he reported the histories in a series of 6 patients and the data in connection with these reports seem to establish the truth of our belief that this condition may be regarded as a clinical entity.

In all these cases there was early, definite and permanent recovery after the abscesses were surgically drained, with the exception of one patient, a boy 17 years of age, about whom there was some doubt because of prolonged convalescence. The infecting organism was staphylococcus aureus in 3 cases, staphylococcus albus and streptococcus in one case, and streptococcus in one case. In one case there is no record of the organism. Four of these cases were in boys from 5 to 11 years of age and the abscess was located on the right side. The doubtful case, in the boy of 17 years, had the abscess on the left side—the organism being staphylococcus aureus. One case was that of a woman 29 years of age, the abscess following confinement and developing on the left side, the organism being streptococcus. There was a history of trauma in two cases and of furunculosis in one case.

All of the patients reported in the series had been ill for at least several weeks before they were seen and in each instance the abscess was fully developed when the patient was first seen.

After abscess formation there is a strikingly uniform clinical picture characterized by:

- (1) Moderate pain about the inguino-crural region and lower abdomen.
- (2) A tender mass of recent formation on the inner side of outer Poupert's or iliac crest.
- (3) Flexion deformity of the thigh.
- (4) Remittent fever.
- (5) High leukocytosis.
- (6) Emaciation and weakness.

In November, 1925, we had the opportunity to study and operate upon a patient during the *developmental* period of abscess formation in the right ilio-psoas region, and the observations made at that time seem to conclusively establish our belief that acute pyogenic abscess may develop in the ilio-psoas region independent of extension, by continuity or contiguity, from neighboring areas as for example the pelvic, perispinal, perirenal, appendiceal or other adjacent regions.

We submit a brief resume of this case which was seen *before* there was full development of the abscess:

Boy of 8 years, referred by Doctor William Taylor, November 13, 1925. He had been feeling badly for about 10 days with fever, loss of weight, and tenderness and soreness in the right groin and lower right loin. There was no evidence of gastro-intestinal or urinary tract involvement. There was no history of trauma or of known infective foci. The chest was normal. The liver, spleen, and kidneys could not be palpated. X-ray of spine and pelvis did not show any skeletal pathology. There was temperature of 102°F., no anemia, w.b.c., 27,450 with 74 per cent neutrophils. Urine normal.

There was exquisite tenderness on the inner side of crest of anterior superior spinous process and extending backward and upward almost to the erector spinae region.

We were not able to entirely exclude perirenal infection until an aspirating needle was used and no pus obtained.

In two respects the clinical picture was distinctly different from that seen in the patients making up the series of which we have spoken. There was no mass, nor was there flexion of the thigh. There was no evidence of localization.

By November 21, the point of tenderness and rigidity seemed to be more distinct just inside the crest of the ilium and we, therefore, made an incision 2 inches long just inside the iliac crest. The attachments

were dissected from the crest, and the ilio-psoas muscle (in this instance it would be technically proper to say the iliacus muscle) was separated from the concavity of the ilium and pushed medially, it being expected that an abscess would be found behind it, as in the case of the patients reported in the series mentioned; but no pus was found.

It was observed, both by touch and by sight, that the muscular mass presented evidence of having in and about it a large amount of inflammatory exudate. Suspecting that the inflammatory focus might be in the muscle mass it was penetrated by blunt dissection, when a very small amount of heavy, rather creamy, odorless pus was encountered, together with a good deal of necrotic material. No distinct abscess cavity could be made out. Two drainage tubes were introduced—one of them into the inflammatory mass in the muscle and one in the space between the mass and the ilium.

A culture from the pus recovered at operation grew staphylococci aureus. After the operation there was an early disappearance of all unpleasant symptoms. There was but little drainage for thirty-six hours, then a little more for a few days, after which there was rapid reduction. At the end of a week both tubes had been removed. The patient was discharged December 2, 1925, eleven days after operation, without fever, pain or distress of any kind. There was practically no drainage. He was dressed at our office December 4th, two days after discharge from the hospital. He was up and walking without difficulty. Drainage had ceased, there being only a small granulating area representing the site of tubes. We had a letter from his father written on December 31, 1925, in which he said that the patient was entirely well.

In connection with abscesses in and about the ilio-psoas, the data secured at the operation upon this patient would seem to definitely settle the question as to whether or not abscesses may develop in an independent manner in this region. It has been suggested by others that abscess behind the ilio-psoas is most likely associated with infectious processes extending downward from the perirenal area. In this case the infectious area was found in the muscular mass, and it was found just at the beginning of coalescence of the various foci that were breaking down in the inflammatory area, but before complete coalescence, with the formation of a definite cavity had taken place. It would

seem that the small amount of pus, with necrotic material, without the evidence of a distinct cavity, would be proof of such a process.

This patient was seen for the first time after he had been ill for about ten days. The patients in the series of six, to which we have referred, had been sick in every case as long as three weeks, some of them longer than a month. In each of those cases there was a mass on the inner side of outer Poupert's with flexion of thigh. It would seem that we are able to conclude that if the process in the case we are now reporting had been permitted to continue there would have been the formation of a typical abscess, resulting in the development of a mass on the inner side of the crest of the ilium, and as a result of the tension of the ilio-psoas, there would have been flexion of the thigh. It is our conclusion, then, that these two signs put down in the syndrome associated with abscess behind the ilio-psoas are present only after the full development of the abscess, and are not necessarily present during the developmental process. This would seem to be a particularly reasonable conclusion if the infectious process is in connection with the iliacus, because in that case the tension would not at first reach the psoas, proper, a contraction of which is the most important feature connected with flexion of the thigh; nor would there be a mass on the inner side of the crest of the ilium, or outer Poupert's until after a full development of abscess in an area more or less remote from the site at which it finally manifests itself by surface swelling.

Our conclusion is that these independent ilio-psoas abscesses develop as a result of hematogenous or lymphogenous infection (from foci somewhere in the body) following slight or indefinite local trauma.

Non-tuberculous ilio-psoas abscess must be differentiated from hip disease, osteomyelitis of the pelvis, appendicular abscess, and tuberculous ilio-psoas abscess.

DISCUSSION OF GENITO-URINARY COMPLICATIONS OF PREG- NANCY*

EARL L. YEAKEL, M.D.
OKLAHOMA CITY

The genito-urinary complications of pregnancy embrace such a large field with such deep ramifications into the realm of

*Read before the Section on Obstetrics and Pediatrics, Annual Meeting, Oklahoma State Medical Association, Oklahoma City, June 22, 23, 24, 1926.

other specialties that it is useless to attempt to discuss them all in a paper of this length. Therefore, I shall confine myself to calling attention to some of the more common complications and the cause of their increase.

It is apparent to all of us that during the past eight or ten years there has been a great increase in promiscuity of the sexes, whether this is due to the natural process of evolution, prohibition, the advent of the automobile or a combination of all three; it remains that watchful expectancy must give way to active watchful prevention.

Our examinations especially of the urine and genital organs must be increased in frequency as a rectal examination will not suffice. I have called attention once before in this section to the fact that the incidence of venereal infection in the married is the greatest during the puerperium.

Examination of the urine must be frequent and complete, not only must we watch for hyperacidity, albumen or casts but the finding of pus cells in the urine demands that we attempt to find the cause. Thus may we often find an unsuspected urethritis, cystitis, pyelitis or nephritis, the early discovery of which may mean everything to our patients.

We must remember that too much bicarbonate of soda produces an alkalosis, the symptoms of which resemble acidosis and not dismiss the patient with the advice to take more soda.

Vaginal examination should be more frequent and more careful and must be from without, inward, and not consist of simply finding out how much the fetus has grown since the last examination.

First we must look for vaginal secretions and free from our minds any idea that a profuse leukorrhœa is ever natural in a pregnant woman either before delivery or afterwards. Yet many women have been so told and so believe. A purulent discharge need not be gonococcal in type to cause much damage and later trouble especially to the vaginal mucus membrane and cervix.

Vulvitis is usually secondary and points the way to an existing Bartholinitis, urethritis or endocervicitis. The mucus membrane of the adult vagina is not easily attacked by the gonococcus unless other infections have preceded or followed.

We next examine the Bartholinian gland on the inner surface of the labia minora opposite the vestibule, this should not be palpable if normal.

In examination of the urethra we must keep in mind the fact that the subjective symptoms of a urethritis in women are often so mild that only a small percentage give a history of noticeable symptoms. The urethra should be stripped and if there is even a suspicion of a discharge it must be examined microscopically.

Endocervicitis is the cardinal lesion in the adult female and one requiring an exacting examination; as far too many women are suffering from a chronic endocervicitis and have become resigned to a chronic leukorrhœal discharge for the rest of their sexual life when this pathology is the result of a condition which should have been found and corrected during pregnancy. The large inflamed, perhaps eroded or ulcerated cervix so often found, usually prevents another conception and frequently leads to abortion. The upward spread of infection leads through the uterus to the tubes and may mean surgical interference. Too often this occurs as a gradual process following delivery.

Abnormalities, malformations, ulcerative lesions and operative conditions of the urogenital tract all come to light by frequent examination. *Bowers of the United States Public Health Service makes the statement that 10 to 20 per cent of all persons have been infected with syphilis and 10 per cent of all syphilitics acquire the disease in an innocent manner. Whether you consider these figures too high or too low they still show us that we should require frequent blood tests on pregnant women. As our syphilitic patients are almost invariably under treated and frequently marry in that condition, an early diagnosis and the prompt institution of vigorous treatment is imperative.

CONCLUSION

We need much more frequent examinations both vaginal and of the urine because of the present sexual attitude of the youth of to-day, the mothers and fathers of tomorrow. Frequent Wassermann's are essential. We must reduce to a minimum the number of women who say, "I have not felt well since the birth of my baby."

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DR. CLAUDE A. THOMPSON.....Editor-in-Chief
Barnes Building, Muskogee, Okla.

DR. P. P. NESBITT.....Associate Editor
Palace Building, Tulsa, Okla.

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EDITORIAL

REDUCTION IN OPERATIVE GALL-BLADDER MORTALITY.

Factors reducing mortality after gall-bladder operations have been recently summarized by Fallon (1) who reviews the results and conclusions after performing 1103 operations upon the gall-bladder in the twenty-five years from 1901 to 1926. Over ninety per cent of the operations were for gall-stones, four fifths of the operations were upon women and four fifths of these had borne children. In the eight years from 1914 to 1921 the mortality was

7.7 per cent. In 1922, 5.2 per cent; in 1923, 4.8 per cent; in 1924, 3.8 per cent; and in 1925 the mortality was 1.9 per cent. This low mortality was not due to the efforts of any one individual, but to co-operative effort in the preliminary preparation and in the operating room. The patients were not selected and in recent years, the operation, with few exceptions has been cholecystectomy. Experience deduced from this work has made Fallon wary of removal of the gall-bladder without stones, for it is often difficult for the internist or operator to tell when a gall-bladder, in the absence of stones, is or is not diseased. Hepatitis, in greater or less degree, as a rule, accompanies cholecystitis, but it was noted that such cases gave no definite clinical picture, the same being true in those cases in whom liver changes had progressed to a stage of cirrhosis. When it comes to removing a gall-bladder without stones, warrant for the procedure must be mainly secured from dependence upon a thoroughly exclusive diagnosis. Reliance is placed upon gall-bladder function tests and the van den Bergh test, the latter especially in selecting the time for operation. Absolute insistence upon early operation after diagnosis of gall-stones, is insisted upon, for gall-stones, may, and do cause liver and pancreatic diseases, even a cholecystitis heart.

Gelpi (2) received a rather startling revelation upon checking the gall-bladder work performed at the Charity Hospital in the ten years, 1914-1925. 174 males and 302 females were operated upon. 173 cases had stones, 26 had had typhoid fever. 78 were recorded as acute, 398 as chronic. Incidental appendectomy did not affect the mortality. Cholecystectomy was done 296 times, with a mortality of 16.21 per cent, while cholecystotomy had a mortality of 16.11 per cent, mortality in the acute cases was 25.61 per cent, in the chronic type, 14.32 per cent, total mortality of all types, whether simple drainage or removal of the gall-bladder was performed produced a mortality of 16.17 per cent. These figures proved to be far beyond expectation, but may be accounted for by the fact that at Charity Hospital certain conditions prevail which explain the rate, outstanding among which is that it is a clearing house for advanced pathology and operations are performed by different individuals. In one service, during part of the time the mortality for cho-

lecystectomy was 5.45 per cent as against 16.21 per cent in the larger series, and, though cholecystotomy was done only eighteen times, the mortality was 27 per cent. He accounts for this high mortality by the fact that only acute cases, the worst operative risks, are drained. As a cause of death chiefly were noted surgical shock, post-operative hemorrhage, sepsis, myocarditis, diffuse peritonitis and nephritis. He suggests serious preoperative study and preparation, more careful selection and administration of the anesthetic, increased use of splanchnic anesthesia and a careful attention to every other detail of the work.

(1). "Observations Based on Eleven Hundred Operations for Gall-Bladder Disease," Michael F. Fallon, Boston Medical and Surgical Journal, Vol. 196; No. 5.

(2). "Analysis of Postoperative Mortality and Postoperative Morbidity in Gall-Bladder Disease," Maurice J. Gelpi, New Orleans Medical and Surgical Journal, Vol. 79, No. 8.

"NATUROPATHY", ANOTHER SALVATION OFFERED MANKIND.

A short time ago, when asked for an opinion as to suggested changes in the law governing a certain so-called medical cult in Oklahoma, which formerly rejected any affiliation with the regular medical profession, but has lately seen the error of its ways and now seeks joint action, we voiced the opinion that such mesalliance was useless and impossible and that the only solution protective to the people of Oklahoma was that offered by the broad principle that every person proposing to practice should be required to show evidence of his fitness in the fundamentals. This opinion is born of the fact that the writer has personally observed, probably a dozen different cults of so-called healing demand separate legislation, separate boards and separate recognition for their disciples, then, as the years passed, and their shortcomings found them out, they have been observed to wholly disappear or become so small numerically that it was even difficult to find a member in the entire State to represent them as a member of the Board they had so arrogantly and ignorantly sought a short time before. Personal observation strongly inclines to the idea that the number of osteopaths in Oklahoma has sharply declined, certainly in the eastern section of the state they have decreased. Where formerly Chiropractors cluttered up every dusty crossroads, it will be found that they have

largely returned to the stable, kitchen or farm from whence they sprung. A quarter of a century ago every hamlet contained one or more Magnetic Healers. Today they are the "Snows of Yesteryear." It is doubtful if a single member of this cult is to be found in all the broad confines of the state, they, too, have returned to the parent stump, or have evolved, or degenerated, as the case may be into Chiropractics and birds of similar ilk.

In replying to our correspondent as to the proposed changes, we are of the opinion that these were like the mythical dragons teeth. Uproot one and it returns multiplied. That we would hardly have the ink dry before another cult would be knocking at the legislative door demanding more farcical legislation. The strange part about all this is that we seem not to profit by experience or use our memory of the past as it slowly revolves in repetition before us. Now comes the Naturopath, in the identical rut of his predecessors. They too wish, and have had introduced a bill which has reached that stage in legislation known as a report of "Do pass" in the House. The definition of Naturopathy is not to be found in a late edition of Webster's International Dictionary, however, that does not deter the scientific originators and supporters of this latest piece of legislative foolishness from offering this as "The science and art of prophylactic and therapeutic methods which enables the naturopathic doctor to direct, advise, prescribe, or apply food, plain, spray, or mineral baths, heat, light, herbs, exercise, electricity, radio-vibration, minor surgery, spinal treatment and the correction of physical lesions by means of mechanical methods, to assist nature in the restoration of health and vigor of mind and body. Naturopathy in this Act shall also embrace obstetrics to be practiced by so many as show competent qualifications."

Now, we submit, if there is much left for the ambitious in other fields of endeavor, we fail to discern it. Just note the far flung abilities embraced-prophylaxis, therapeutics, dietetics, hydroand greasotherapy, in all their ramifications, thermotherapy, herbalism, athletics, electricity, massage, surgery, "spinal treatment" (this sounds suspiciously like some old offenders of the past), mechanics, and, finally, a means of "assisting nature". As an afterthought, one may practice obstetrics,

if they are fitted to perform that simple service.

Disguised under any name or title, this silly proposition is merely another effort on the part of the misfits and incompetents to have themselves legislated into the privileges and prestige of worthy and earnest students and practitioners of medicine.

FOR OKLAHOMA'S CRIPPLED YOUTH.

If the recent Legislature did nothing except enact House Bill 170 it did enough to permanently command the respect and admiration of thinking people. This Bill, signed by Governor Johnston, March 10, with the emergency clause attached immediately becomes the law with reference to the cripples of Oklahoma, a class heretofore largely pitied, but rarely ever the recipients of actual aid and help tending to improve and ameliorate their condition.

Briefly, the terms of the law provide as follows:

Any Judge, on his own motion, or on complaint of any elector, when it is alleged the parents or other person legally charged with the care of a resident of six months duration, under twenty-one years of age, and who is suffering from a deformity or malady, which may probably be cured, are unable to provide means for medical and surgical treatment and hospital care; may direct the County Superintendent of Health to personally examine and report upon the condition, after which procedure, the Judge shall have power to summons other physicians, for opinion. No more than thirty days may elapse until such reports are filed, and, in certain cases the court may waive entirely such formality. After the usual procedure of courts, which in this case attempt is made to expediate with every reasonable precaution, the Court may enter an order for entrance of such child to the University Hospital, Oklahoma City, for free treatment. Provided, cases of plastic and orthopedic surgery may be sent to other Oklahoma hospitals, provided such hospitals are will to accept the compensation provided for in the Act and are "approved" under Section 7 of terms of the Act. Section 7 provides, that physicians and hospitals desirous of qualifying for this work shall make application to the dean of the University of Oklahoma, School of Medicine, submitting their qualifications, which will be

passed upon by the faculty of the University, and approved or disapproved, as the case may be. Only those orthopedic surgeons may be approved as specialists who devote at least sixty per cent of their professional time to that chosen specialty, and hospitals to be approved under the Act must meet the requirements of standards as set by the American College of Surgeons. At least once annually the faculty of the University, in conjunction with the State Health Department, shall hold free general clinics in each congressional district, for the purpose of examining children who may be presented for such.

We believe that, in the main, this will meet with the whole hearted approval and support of every thinking physician in the State. There may be some criticism as to the tests for hospital qualifications, but that is a mere detail of a large humanitarian plan, which may be finally worked out until the whole is a finely working machine, functioning in a very noble purpose. As a matter of fact most of such children are financially unable to help themselves, otherwise there would be no necessity for the law—they would go where they please and receive treatment accordingly, but in this case they will be referred to the very best orthopedic surgeons of the State, who will receive some compensations, but nothing in keeping with the service rendered, but largely offset and compensated for in that their cases are centralized in groups, under their immediate observation and control, therefore, in the most satisfactory condition possible.

DR. O. O. HAMMONDS, STATE COMMISSIONER OF HEALTH

Dr. O. O. Hammonds, Okmulgee, was recently appointed by Governor Johnston as State Commissioner of Health, immediately assuming the duties of office. Dr. Hammonds, for many years was surgeon for the Choctaw Lumber Company at Broken Bow, in charge of the hospital at that point and for several years past has resided in Okmulgee, doing general work.

THE JOURNAL wishes Dr. Hammonds success in the performance of a rather hard task and believes that the majority of the medical profession will meet him in a co-operative manner, sympathetic of the fact that the laws under which he is to function are not perfect by any means, that his task cannot be performed over-



DR. OLIVER OVERSTREET HAMMONDS
STATE COMMISSIONER OF HEALTH.

Born March 27, 1880. Graduate University Medical College, Kansas City, Mo., 1900. Dr. Hammonds was formerly Surgeon of the Broken Bow Hospital, later removing to Okmulgee, where he has resided for several years.

night, and that only by co-operation from them is his work to be marked by any particular success. We believe Dr. Hammonds will be unusually firm in his insistence that the spirit and letter of the law be carried out and also that his contacts with the profession will be pleasant and profitable. Everyone is assured that he is a genial and pleasant gentleman and not above receiving suggestions and aid from the medical profession.

VALIDITY OF THE STATE BOARD IS UPHELD

As has been predicted for some time by close students and authorities of the law, the State Supreme Court recently upheld the validity of the State Board of Dental Examiners, which automatically closed the suit and contention brought against the State Board of Medical Examiners alleging that they, too, were acting illegally in accepting fees for registration instead of reimbursement directly by legislative appropriation. Validity was challenged when the Criminal Court of Appeals rendered a decision virtually overriding former decisions of the Supreme Court, which indirectly upheld the constitutionality of similar boards.

The legislative committee of the association, and the State Board of Examiners had had prepared a comprehensive Bill for presentation to the legislature in the event the Criminal Court of Appeals' contention was sustained, but fortunately is not now necessary. And, we are not sorry over the decisions, for the whole objection was based upon very flimsy technicalities, forgetful of the fact, which all physicians should not forget, that the State Board of Medical Examiners is a body created by direct authority of the Constitution, and even should they err in the small matter of the means by which they collect fees, their life and validity cannot be attacked on that ground with any ultimate hope of success.

Editorial Notes—Personal and General

DR. H. G. CRAWFORD, Dewey, visited Chicago clinics for special work in surgery during January.

DR. A. L. DAVENPORT, Holdenville, recently received painful injuries when his car skidded into a ditch.

DR. and MRS. W. K. WEST, Oklahoma City, visited Cincinnati and Memphis in February.

J. L. LEHEW, Pawnee, imitated Doctor Davenport, in also sitting in the seat while his car skidded into a ditch. He reports bruised but busy.

NOWATA COUNTY Medical Society elected for 1927, Dr. J. P. Sudderth, President, and John R. Collins, Nowata, Secretary.

PONTOTOC COUNTY held a meeting and banquet at Ada, February 21. Dr. M. C. McNew was toastmaster and Dr. S. E. Milliken, Dallas, the guest of honor. Mc read a paper upon his inguinal hernia operation, illustrating the work with cuts.

OKMULGEE COUNTY Society meeting at Henryetta, February 15, had as its guest, Dr. P. T. Bohan, Kansas City, who talked on "Coronary Thrombosis." A clinic on chest conditions was held.

ST. JOHN'S HOSPITAL, Tulsa, at a special meeting, January 27th, named the following staff, Drs. Fred A. Glass, president; W. Albert Cook, vice-president and C. T. Hendershot, secretary-treasurer. Regular meetings are to be held the third Tuesday in each month.

DR. R. M. HOWARD, Oklahoma City, was elected President of the Southwest Section, American College of Surgeons, meeting in Tulsa late in January. Dr. McLain Rogers, Clinton, Secretary, Leroy Long, Oklahoma City, Councillor. The next meeting will be held in Little Rock.

MUSKOGEE is to have a large expansion in hospital construction according to announced plans of the Baptist Hospital Directors of Muskogee, Additions totaling an expenditure of \$125,000.00 are planned, which, when added to the present structure will double its capacity.

THE CRIMINAL COURT OF APPEALS recently sustained the conviction of Dr. J. T. Reeves "Specialist in Chronic Diseases," from Ardmore, Carter County. The Court decided that one not a graduate or registered was not permitted to use the term "D.R.," "M.D.," "Specialist", or any other term indicating that he is a licensed physician.

DOCTOR HOWARD WEBER

Dr. Howard Weber, Bartlesville, a retired physician and one of the State's original and successful oil developers died January 29, 1927, at his home, the cause of death was myocarditis. For several years he has not practiced medicine, his mantle in that respect having fallen to his son, Dr. Henry C. Weber, Bartlesville, surgeon and member of the State Board of Medical Examiners. Dr. Weber graduated from the Long Island College Hospital in 1882. He engaged in the oil business in Oklahoma from 1904 to 1926, his greatest achievement being the development of the Turkey Mountain pool, near Tulsa.

MUSKOGEE is "all at sea" over the question of a hospital location. Recently, after sale to the Veterans Hospital of the City hospital, the city found itself with the cash to build, but minus any concrete plan as to how much, how large or where to build a needed institution for the care of its people. A committee from the Council rejected an offer from the Baptists, selected a site, alleged to be largely mudhole, mosquito, noisy and generally unfitted, then rescinded that action and are now marking time.

THE TULSA ACADEMY OF MEDICINE was organized in that city, March 9th, with the following officers to conduct its activities: President, Samuel Goodman, vice-president, D. O. Smith, secretary-treasurer, James Stevenson. A board of directors consisting of Samuel Goodman, Fred A. Glass, Jas. C. Braswell, D. O. Smith and James Stevenson was named. The next meeting will be held at Hotel Mayo, April 20th, at which time Dr. Goodman will present "Lung Abscess following Tonsillectomy," all members of the medical profession will be welcome at this and subsequent meetings.

ACCIDENTAL OR VIOLENT death came to 1494 Oklahomans during 1926, (according to figures recently handed the press by Dr. O. O. Hammonds, State Commissioner of Health. Of the number 211 were suicides, 266 due to automobile injuries, 206 homicides and 791 listed as caused by other accidental or violent means. Incidentally, pneumonia accounted for 2236 deaths, heart disease 1669, tuberculosis 1321, diseases of kidneys 1204, cancer 1168 and apoplexy 1008. 11,314 males and 9,165 females was the division as to the sexes.

MENTALLY DERANGED patients will no longer have their expenses paid by counties committing them to state hospitals if the Supreme Court is correct in a recent ruling and no relief is afforded otherwise by legislative action. Logan County authorities recently repudiated or refused payment of bills aggregating more than \$27,000.00 demanded by the State Hospital at Norman rendered for care of those committed by courts from Logan County and the Supreme Court sustained the county contention. Perhaps the

ruling is just, for it should be remembered that a large number of people are committed from Logan County, chargeable to other counties committed merely by reason of the fact that they are temporarily resident of Logan County, yet technically residents of Logan.

GARFIELD COUNTY Medical Society will hold a special guest day program at Enid, April 16, 1927. Clinics in Pediatrics, Dermatology, Orthopedics, Internal Medicine and Surgery will be held in the morning. In the afternoon the following program will be presented.

"Some of the More Important Points in the Diagnosis of Brain Tumors," Dr. Ernest Sachs, St. Louis.

"Intestinal Obstruction," A. D. Small, Dallas.

"Symptoms of Underfeeding in Breast-fed Infants," Wayne Rupe, Norman, Okla.

"Troublesome Fractures," C. E. Ruth, Des Moines.

"Types of Urinary Incontinence," D. K. Rose, St. Louis.

"Diagnosis and Treatment of Cancer of the Skin," Richard Sutton, Kansas City.

"Residual Infection in the Jaw after Teeth Extraction," C. W. Keeling, Kansas City.

A banquet will be held at 7:30 p.m. after which Dr. Richard Sutton, who has hunted extensively in Africa will give an illustrated lecture on Tiger Trails of Southern Asia.

SMALLPOX has lately challenged the attention and interest of health officers generally in central Oklahoma, especially demanding attention in the Seminole, and allied oil fields. The new State Commissioner of Health, Dr. O. O. Hammonds promptly met the issue by personally going over the field and assigning a large number of competent men to handle the situation. Dr. D. P. Bowden, representing the United States Public Health service and assigned to Oklahoma visited the field and co-operated. Health officers of Hughes, Seminole, Okmulgee and Okfuskee Counties also co-operated in the work, sounding the necessary warnings and offering free vaccinations to those in need. This is all very

DOCTOR H. E. RAPPOLEE

Dr. H. E. Rappolee of Madill, died in Oklahoma City, February 25th, after suffering from illness for two years. The cause of death is given as cancer. Dr. Rappolee was born at Smithland, Ky., June 29, 1869, and after attending the common schools he entered and graduated from the Kentucky School of Medicine, June 1898. He located at Bennington, Indian Territory where he practiced in 1879 and 1898. After that he located in Caddo where he lived for nine years. At the time of his death he was serving his second term as health officer of Marshall County. and had resided in Madill for nine years. He is survived by his widow, two daughters and three sons. His remains were interred at Madill.

DOCTOR ANTHONY R. MAVITY

Dr. A. Ralph Mavity, Marlow, died at his home in that city, February 5th, after a short illness. Death is reported as due to heart disease.

Born at Corning, Mo., November 3, 1880, he received his preliminary education at Corning and Stansbury, Mo., after which he attended and graduated from the Central College, St. Joseph, Mo., March, 1902. After receiving his license in Oklahoma in 1902, he located in Lawton where he remained for several years, moving to Harlow in 1916. He served as a medical officer in the World War. He is survived by his widow and several brothers and sisters who reside in the middle west. Burial was made under the auspices of the Masonic order, Methodist Church and the American Legion of which he was a member. A firing squad from Ft. Sill aided to the solemnity of the occasion. Interment was made at Lawton.

nice and it should be, according to past standards, but still, the writer believes that more effective results would accrue if health officers and all physicians should announce. "People, smallpox threatens y u, pay no attention to it. I need work and a case of smallpox n t s me decidedly more than a harmless vaccination. Take your choice."

ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M. D.
717 North Robinson St., Oklahoma City

Operations in the Treatment of Spastic Paralysis, by H. L. Von Lackum, M.D., New York City, N. Y. Journal of Bone and Joint Surgery, July, 1926.

In this article the author begins by urging that anything offering relief to the patient should be carried out as every one knows the burden thrown upon those caring for the patient and the later effect on the patients themselves. He also calls attention to the good derived by operation upon many of these patients, that is, their improvement mentally, the new interest in life that may be aroused and betterment in general health.

A brief resume of the anatomy, of the structures occupying points for selective operation, with description of different methods of prevention and correction of deformity and consequent post-operative muscle training and education which will at least equip these individuals to care for themselves and relieve others of such responsibility.

He also calls attention to Sharp's work on hemorrhage in the new-born and emphasizes the fact that should proper observance at birth be carried out, fewer cripples will result and effort saved for constructive work instead of being used in repair of that which never should have been.

A Simple Measure Method of the High Trochanter: Karl Bragard, (Munich). Ztschr. f. ortho. Chir., xlvii, 2, 232, February 15, 1926.

A lead tape is placed along the crest of the ilia and the point of the trochanter which is still palpable to the finger is marked. Then the legs are slightly spread and a caliper is applied—one point touching the wire and the other the tuber ischii, the caliper being held perpendicular to the wire. Then the legs are adducted and in the same manner the distance is read between the marked trochanter and the wire along the crest. The comparison of the readings on both sides gives changes in the height of the trochanter. The method has been tried by the author on more than one hundred cases and the margin of error was found to be less than one-half centimeter.

Fractures of the Head of the Femur: Frederick Christopher M.D., Archives of Surgery, May, 1926, p. 1049.

Fractures of the head of the femur are said to be very rare, only fourteen having been recorded. The author adds the report of another case, and abstracts those previously reported in the literature.

The fracture usually results from extreme violence and is almost always associated with a posterior dislocation. This complication makes diagnosis extremely difficult so that X-ray examination or actual inspection of the site of injury is necessary for positive diagnosis. In most of the cases, treatment, which consists of reduction of

the dislocation followed by early mobilization, resulted in only fair function recovery. In some cases operative removal of the fragments is necessary.

BACTERIOLOGY, PATHOLOGY and PUBLIC HEALTH

Edited by Drs. L. A. Turley and Gayf. ec
Ellison, Norman, Oklahoma

The Intravenous Use of Acriviolet and of Mercurochrome in Bacterial Infections.

James S. Simmons—The Journal of Infectious Diseases. Vol 29, No. 4, October, 1926.

Since bacteria were first known to cause disease, the medical profession has sought diligently for some chemotherapeutic agent that would combat them. The discovery by Ehrlich of the spirocheticidal action of salvarsan has stimulated an enormous amount of research in this field. So far, the search has not been successful.

Among the many chemotherapeutic agents used, certain dyes, as gentian violet, neutral acriflavin, and mercurochrome 220 soluble are of special interest. In order to obtain further information of the subject, an investigation was made at the Army Medical Center to determine the bactericidal action, toxicity, and chemotherapeutic value of acriviolet, a mixture of neutral acriflavin and gentian violet, and of mercurochrome 220 soluble. A brief review of the action of gentian violet and neutral acriflavin follows.

The experimental investigation of acriviolet was carried out to determine; 1. The bactericidal action in vitro; 2. Local antiseptic action on the skin; 3. Toxic effect on the tissues; 4. Value of the intravenous treatment of septicemia and general infections in animals and man.

1—It was found that acriviolet in vitro was an effective bactericidal substance in the absence of proteins. A 1-1000 solution killed staphylococci in fifteen minutes. When blood was added, however, a concentration of 1-200 of the dye was required. Ox bile also interfered with the bactericidal action.

2—A five per cent acriviolet in 50 per cent alcohol sterilized the human skin in two minutes.

3—Toxic effect on normal tissue. Acriviolet injected subcutaneously caused a necrotic lesion of the skin in animals and in man. Aqueous solutions of acriviolet caused hemolysis of red blood corpuscles.

Various amounts of the dye were injected into normal rabbits. From these experiments it was found that if acriviolet was used intravenously, amounts of more than five milligrams per kilo body weight of a five per cent solution proved fatal.

4—Value as treatment of bacterial infections: Rabbits were injected with standardized doses of staphylococcus aureus, and treated with various amounts of acriviolet. In all instances the control animals lived longer than the treated animals.

Acriviolet was used intravenously for the treatment of eight cases of bacterial infections, six of which were septicemia. One of the cases of septicemia was infected with staphylococcus albus, one with streptococcus viridius, and four with

streptococcus hemolyticus. A five per cent sterilized solution of the dye was used.

The treatment was discontinued because it had no therapeutic effect, and because of its toxicity to the kidneys.

In this series two cases showed some improvement, two showed no improvement, four became worse and three of them died.

Mercurochrome 220 soluble: Mercurochrome 220 soluble, the disodium salt of dibromehydroxylmercurifluoresceine, contains 23-24 per cent of mercury, has been extensively used as a germicide both locally and intravenously. The results of the experiment:

1—Bactericidal action in vitro: *Staphylococcus aureus* and *B. Typhoid* organisms were used. A 1-100 solution in water killed the staphylococcus in fifteen minutes; a 1-20,000 solution in water killed the staphylococcus in one hour. However, when blood was added to the solutions, a one to one hundred dilution did not kill the organisms in one hour. To obtain this concentration in the blood stream would require the injection of a fatal dose.

Typhoid bacillae were killed in five minutes in a 5000 dilution in water. A 1-25,000 dilution killed them in thirty minutes.

If ox bile was added to the solution it required five times the concentration of the dye to kill the organisms in the same time.

2—It was concluded that a 5 per cent solution of mercurochrome 220 soluble in 50 per cent alcohol was an effective local antiseptic on the skin and on tonsils.

3—A 1 per cent aqueous solution of mercurochrome 220 soluble was especially prepared for intravenous injection by the manufacturers and used in this experiment: (a) in various bacterial infections in man; (b) experimental staphylococcus aureus septicemia in rabbits; (c) experimental typhoid cholecystitis in rabbits.

The results:

(a) Twelve patients, ten with genito urinary infections, received from one to three doses of mercurochrome: Dose—3 to 5 m. g. per kilogram body weight; intravenously at weekly intervals. The genito urinary group included eight patients with gonorrheal infection. The use of the dye had no apparent effect on the gonococci or on the discharge in acute cases nor did it contribute to the clinical recovery in this group.

The other two cases—a case of chronic empyema with septic temperature, and one case of hemolytic streptococcus septicemia died after receiving one and two doses, respectively, of the dye.

Intravenous dose of 5 m. g. per kilogram per body weight produced such severe reaction that the dose was reduced to 3 m. g. per kilo. Even then, symptoms of mercurial poisoning were produced.

(b) Rabbits injected with fatal doses of staphylococcus aureus, were treated immediately with one or more doses of mercurochrome intravenously in doses of 5 m. g. per kilogram body weight. Most of the treated rabbits died before the control rabbits died.

(c) Hill and Scott report that typhoid cholecystitis in rabbits could be cured by a single intravenous injection of mercurochrome and suggested this treatment in human typhoid carriers.

A biliary fistula was produced in rabbits for collection of the bile. Five m. g. per kilogram of mercurochrome 220 soluble was injected intravenously into these rabbits, and the amount of

mercurochrome secreted in the bile was estimated. It was found that mercurochrome was secreted in the bile in a concentration of 1-2000 to 1-9000 for over two hours. In as much as the typhoid bacillus is killed in bile solution in 1-5000 dilution in less than thirty minutes the experiment was considered encouraging.

However, when typhoid bacillae were added to this bile containing excreted mercurochrome it failed to kill the bacillae in twenty-four hours.

Nichols succeeded in producing a typhoid bacillus cholecystitis in rabbits, proving by culture that the typhoid bacillae were present in the gall bladder.

Each animal was given 5 m. g. of mercurochrome 220 soluble per kilogram on two successive days. When these animals were killed at the end of four and seventeen days respectively the gall bladders of each still contained living typhoid bacillae.

Nichols also treated one human typhoid carrier daily with 100 to 200 m. g. of mercurochrome by mouth for a week. Cultures of the feces still contained typhoid bacilli. In view of the work reported, it is not believed that the intravenous use of either acriviolet or mercurochrome 220 soluble offers promise of beneficial results in the treatment of bacterial infections.

Bacteriologic Study of Chronic Periapical Dental Infection.

Hoyden, Russell L.—The Journal of Infectious Diseases, 38:486, 490, June, 1926.

The relation of chronic periapical dental infection and pulpless teeth to acute and chronic systemic disease has been attracting attention of clinicians for the past few years. It is, therefore, important to determine the accuracy and dependability of the diagnostic methods employed in detecting periapical infection.

The author records the result of cultures of the apex and periapical tissues of 1500 teeth.

All cultures were made in deep tubes of glucose brain agar, and also in glucose brain broth, Ph. 7, as this medium affords the best gradations of oxygen tension, and nutritive quantities favorable for the growth of organisms in infections about the teeth. In the agar medium, one can determine the approximate number of organisms in the material inoculated. The broth cultures are used for the inoculation of animals, transplants on blood agar plates, and identification of organisms.

The greatest care is exercised in obtaining the material for culture. The teeth to be extracted are first scrubbed with gauze, teeth and gums painted with iodine, and then washed with alcohol to remove the iodine. After the area of operation is walled off with sterile gauze, the teeth are extracted with sterile forceps. After extraction, the apex of the tooth was cut off and placed in a sterile tube containing 1 c. c. of normal salt solution, and a small amount of sharp sand. The tube is well shaken to macerate the tissues at tip of tooth and a portion inoculated into the liquefied glucose brain agar at 40 degrees C.; the remainder into the glucose brain broth.

The glucose brain agar tube was mixed by inverting, pouring into Petri dishes and allowed to harden. Incubate at 38 degrees D., for twenty-four to forty-eight hours. Gram stains were routinely made of positive broth cultures. For determination of types of cocci, transfers were made from broth tubes to blood agar plates. Single colonies of streptococci were picked and

transferred to brain broth tubes and inoculated Clinical Material.

For statistical purposes, the author has included cultures from 1500 incisors, cupids and bicusps, only which had been extracted without contamination. As controls, to determine chances of error, cultures of vital teeth, were used, employing the same technic, and in curing pulpless teeth. Careful radiograms were obtained from all teeth by a uniform method, at least two views of each tooth.

The teeth cultured were divided into three groups: vital, pulpless, and negative in the radiograph, and pulpless and positive in the radiograph.

Teeth that respond to the electric current were classed as vital. The teeth that show no response to stimuli were classified as pulpless.

Results of cultures:

Four hundred vital teeth were cultured. Of these, 85.5 per cent showed no growth in brain broth agar, while 55 per cent showed growth in the broth tubes. As vital teeth without caries are thought to be sterile, the positive cultures were no doubt mostly due to technical error resulting in contamination from saliva. Only 4.8 percent of the 400 cultures showed 1000 more colonies per tube. The cultures of vital teeth and the results were made for comparison. Agar tubes with less than ten colonies of bacteria were classified as possible contamination.

Five hundred radiograph positive pulpless teeth were cultured; 26.6 per cent showed no colonies in agar tubes. Sixty-two and eight per cent had 1000 more colonies. Forty-four and two per cent had over 1000 colonies per tube.

Six hundred pulpless teeth with negative radiographs were cultured; 43.3 per cent showed no organisms in agar tubes; 25.7 per cent had over 100 colonies per tube; 46.2 per cent had 1000 more colonies per tube.

The most noteworthy finding in the X-ray negative group was the high percentage showing bacteriologic evidence of infection without radiographic evidence. The evidence of infection being nearly as high as in the radiographic positive.

The types of organisms found were quite uniform—of the 1091 positive cultures 1009, or 92.5 per cent, showed streptococci alone or mixed with other organisms. In 963 only streptococci were found, 58 gram positive bacillae alone, and only 19 times were staphylococci found alone.

Most of the streptococci appeared as elongated diplococci, resembling pneumococci. The nonhemolytic streptococci were the common type. Hemolytic streptococci rare.

UROLOGY and SYPHILOLOGY

Edited by Rex Bolend, B.S., M.D.
1010 Medical Arts Building, Oklahoma City.

The Relation Between the Right Kidney and the Appendix from the Viewpoint of Pathology.

"Laquiere (Journal d'Urologie) begins his article with a historical sketch in which he says among other things that it was only at the close of the last century that the urinary complications of appendicitis were given any study, and at that time one had in mind perinephritis and vesical complications. The renal lesions in the disease

were particularly studied by Dieulafoy under the title of 'le rein appendiculaire'."

The article is to be continued. In the first installment in Vol. xxii, No. 2, August, 1926, the author, in addition to the historical sketch, says the very great frequency of involvement of the kidney with appendicitis is due to the anatomical relation of the right ureter with the appendix; the vascular, lymphatic, and nervous connections between the two; the existence of lesions or of ptosis of the right kidney leading to a tendency to infection. But a number of cases in which the right kidney is involved and not the left also, must remain unexplained at the present time.

It would seem as if the appendix and the right kidney were entirely separate and independent organs. The appendix lies free in the abdomen and is intraperitoneal, while the kidney is retroperitoneal. The blood vessels, the nerves and the lymphatics of the appendix pertain to the portal system, whereas the kidney has a special vascularization and innervation of its own and the veins belong to the vena cava system. But in reality there is a close connection, vascular, lymphatic and nervous.

When there is ptosis of the kidney and this organ becomes displaced so as to lie behind the appendix; when the cecum and appendix become extopic they lie against the kidney.

A relation between the appendix and the ureter is frequently close. In fact, the kidney and the appendix normally lie far apart and it is with the ureter that the appendix comes into contact. An inflamed appendix may form adhesions with the kidney, the pelvis of the kidney, or with the ureter.

The vascular systems of the kidney and of the appendix are apparently distinct from one another, in fact, form many anastomoses. The arterial anastomoses exist between the arteries of the colon and of the perirenal arteries, and are of slight importance. The anastomoses between the veins are of far more interest. They are constant and normal and constitute the system of Retzius, a portocava way of anastomosis. Numerous plexiform vessels given off from the appendix and the colon communicate with the veins of the parietal peritoneum. These are tributary to the lumbar veins and the veins of the fatty capsule. The normal anastomoses are far more numerous when the appendix is attached to the posterior wall, and the direct communication between the veins of the appendix and the ureter have been observed. Anastomoses such as those described can play only an unimportant part in the infection of the kidney by the appendix.

Lymphatic anastomosis between the appendix and the kidney is much disputed.

There are nervous connections between the appendix and the kidney.

Toxic substances produced by bacteria in the appendix may enter the kidney and cause a nephritis with albuminuria and casts in the urine. Infection of the kidney may also occur from the bacteria in appendicitis.

Some of the further observations which the author makes are that "appendicular nephritis" is not rare. The infection of the kidney from the appendix is in the large majority of cases due to the B. coli. Hematuria may occur in all forms of appendicitis acute, sub-acute and chronic, sometimes after appendectomy."

The above article is so pertinent to many misdiagnosis of the present day that I have copied it verbatim from the Prologic and Cutaneous Review.

SILVER COMPOUNDS

Silver nitrate first demonstrated the bactericidal property of silver. This was, obviously, an invitation to the chemist to devise a silver compound that could be used freely in solution, as silver nitrate could not. Especially desired was a silver salt that would kill the gonococcus without irritating the urethra, for it was soon learned that silver was especially efficacious as a gonococcide. To the majority of silver compounds offered from time to time one of two objections is made by the patient: first, they hurt; second, they left dark stains on the linen.

Now comes a comparatively new silver iodide preparation—one that actually protects the silver and the iodine from the action of light, and yet leaves its activity as a germicide apparently unimpaired. Neo-Silvol, as this product is called, is said to be 20 times as active as pure carbolic acid (in other words, to have a phenol co-efficient of 20) in contact with the gonococcus, and at the same time to be notably bland in its effect upon the inflamed tissues and free from the dark-staining tendency that characterizes other silver preparations.

Further particulars are offered to the readers of the advertisement on Neo-Silvol which appears on another page of this issue.

EXOGENOUS REINFECTION IN PULMONARY TUBERCULOSIS.

Lawrason Brown.

The American Review of Tuberculosis, January 1927.

There are three theories as to the source of adult pulmonary tuberculosis, (1) that it is all caused by childhood infection, (2) that it is largely due to exogenous reinfection from inhalation, (3) that while both occur endogenous reinfection is the more common and that exogenous reinfection rarely occurs after the twenty-fifth year. Proof of these various theories is very difficult and has not been accomplished up to date.

"From what data we have it would seem that adult infection does occur, and that it occurs much more frequent than many have supposed. The important problem, however, is: Does this infection, occurring after the age of 15 years, ever result in adult pulmonary tuberculosis, and, if it does, how frequent is it? Whether or not the tubercle bacilli is ubiquitous, many believe that today adults are constantly being exposed if they dwell in congested communities. Some of these implantations up to the end of the third decade may be primary infections, which the natural resistance, acquired possibly through heridity, enables the individual to resist, though it renders him allergic or hypersensitive to later infections, which, as I have said, is more or less continuously taking place. Others of these implantations result in reinfections, and may add to the acquired or natural immunity already present, or, if they occur at a time when the bodily forces are at a low ebb, they may produce a definite focus of disease, which for a longer or shorter time may

remain undiscoverable by clinical means. The occurrence of debilitating circumstances may finally bring this adult infection, or more often reinfection, into activity, and clinical disease thus result. It is not likely that reinfection is followed at once by clinical disease.

The period during which reinfection takes place may extend from infancy to middle life, but exogenous reinfection probably occurs most frequently from the fourth to the twentieth years. Roentgenological studies indicate that by the tenth to the twelfth year many children have definite parenchymatous pulmonary involvement. Evidence is still lacking to prove that these are the subjects that will develop adult pulmonary tuberculosis from the fifteenth to the twenty-fifth year, but such an inference is strongly suggested. It may be that future study will show that these cases comprise many of those referred to in an earlier section of this paper as having peritruncal pulmonary lesions, which, as we know do follow in some instances of healed adult pulmonary lesions which apparently afford their bearer almost complete immunity to a future parenchymatous tuberculosis. If this is proved to be true by future work, then reinfection from puberty to the twentieth year may yet be found to be the most frequent cause of adult pulmonary tuberculosis. I am convinced that a certain percentage, somewhere between 20 and 40 per cent of adult pulmonary tuberculosis, is due to infection after puberty. I do not mean to imply that endogenous reinfection does not frequently take place, but I should like to protest against the assumption that it has been proved to be the most frequent manner of production of pulmonary tuberculosis or, indeed, that it is proved at all."

THE PART PLAYED BY CONTAGION IN TUBERCULOSIS AMONG ADULTS.

Stephen J. Maher.

The American Review of Tuberculosis, January 1927.

A study of the histories of 200 intelligent patients with tubercle bacilli positive sputum under treatment in the three Connecticut State Sanatoria indicated that the disease was possibly due to childhood infection in 11 cases; possibly to infection in adult life in 11 cases; probably to adult infection in 2 cases. There was nothing in the remaining histories to indicate that contagion, either childhood or adult, had anything to do with the present illness.

A careful study of the histories not giving contagion as a cause for the disease showed that more than one cause was frequently suggested in a single history, as, "dusty occupation and pneumonia," "severe scarlet fever, repeated furunculosis and pneumonia." Of these patients, 13 gave a history of long use of tuberculosis milk, 85 non-tuberculosis pulmonary disease, 45 severe skin disease, 21 severe abdominal disease, 38 severe throat disease, 100 dusty occupation, 11 noxious fumes and 6 bad working conditions. The number giving a history of long inhalation of dust while working was surprising even in a manufacturing State; of these 21 had worked in cotton mills, 19 in metal dust, and 30 in stone dust.

If contagion is the only cause of adult tuberculosis the disease should be on the increase rather than on the decrease as it is. The author feels

that since contagion played so small a part comparatively speaking in this series of cases, and since the anti-tuberculosis campaign has so lessened the opportunity for contagion, that perhaps the falling death rate is due to this work and that the time has now come to devote attention to educating the public to fight the many other conditions which cause this disease.

THE COMMUNICABILITY OF TUBERCULOSIS IN ADULTS.

Gaetano Ronzoni.

The American Review of Tuberculosis, January, 1927.

Figures on the proportion of cases of tuberculosis infection or latent tuberculosis among civilized adult individuals vary from 30 to 55 percent, the period of latency usually starting at the end of adolescence and increasing with age. The idea that adult tuberculosis, in countries where the disease is endemic, is the result of a superinfection either exogenous or endogenous is well established at present. While these two theories of re-infection are directly opposed, few authorities support one to the entire exclusion of the other. The solution of this problem is important from a standpoint of individual and group prophylaxis as well as from a scientific standpoint.

Except among adult members of primitive civilizations in whom the disease progresses with the characteristics of a primary infection, recent tuberculosis infection cannot be considered responsible for the clinical symptoms of tuberculosis. Since clinical study and pathology anatomy show that the lesions resulting from primary infection are frequently never strictly latent, adult tuberculosis is often a late re-activation of an early infection. Thus progressive adult tuberculosis should be considered a superinfection from the re-activation of an old lesion as well as the result of a super-infection from an external source. Extra-pulmonary tuberculosis is usually due to endogenous super-infection through metastases from old re-activated foci, while pulmonary tuberculosis may be due either to the local re-activation of old lesions or to the spread of the germs from these lesions. While exogenous super-infection cannot be considered the predominant cause of adult pulmonary tuberculosis neither can it be excluded nor can it be properly evaluated at present. Massive infection seems to play little part, small repeated doses appear more active in a direct manner, while the toxic action developed by the bacilli killed and re-absorbed at the site of penetration is important.

Childhood being the most vulnerable age of infection, prophylaxis should be applied especially during the period. The early recognition of tuberculosis in the adult as well as all modern hygienic measures are important features in the control and diminution of this infection.

pages, 93 illustrations and complete Index to Vol vi. Per Clinic year, (February, 1926, to December, 1926). Paper, \$12; cloth \$16 net. Philadelphia and London: W. B. Saunders Company.

While this issue is replete with the usual high class matter, one article especially, "Painful Shoulder" by Dr. Francis R. Haussling, Newark, may be so well worth while to both the distressed patient and vexed physician, that its close perusal will be of actual benefit to a certain class of very intractable cases. Another article worth while is "An Operative Method of Treating Hernia in Infants," by Dr. Paul M. Mccray, Camden.

The Specialties in General Practice. Compiled by Francis W. Palfrey, M.D., Instructor in Medicine at Harvard University in collaboration with 14 other teachers of Harvard Medical School. Octavo of 748 pages. Philadelphia and London: W. B. Saunders Company, 1927. Cloth, \$6.50 net.

This is an unusual book in that it attempts to formulate in a practical way the more frequent conditions belonging to the specialties rather than to internal medicine which the general practitioner is most called upon to treat. The fourteen collaborators in its preparation, is each himself, a specialist in his work attached to the teaching staff of Harvard Medical School. The text covers dermatology, genito-urinary surgery, gynecology, rhinology and laryngology, obstetrics, ophthalmology, orthopedic surgery, otology, pediatrics, psychiatry and surgery. Of course only general principles and the clearer indications can be noted, when the large field to be covered is considered. The book should be unusually valuable to the busy man and the beginner in medicine.

HISTORY OF THE MAYO CLINIC

Sketch of the History of the Mayo Clinic and Mayo Foundation. Octavo volume of 185 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1926. Cloth, \$3.50 net.

We commend this volume to those in need of inspiration. A reading of its pages, even the statistical parts, should spur every medical man to better effort. It contains proof beyond question that well ordered study and planning will accomplish that which is seemingly impossible. The average reader will be amazed to know that at the Mayo Clinic there are 27 operating rooms, and that "Operating is not necessarily the only work performed, for, in 1924, of the 60,063 cases passing through the clinic, operations were performed upon only 23,628. In passing it

BOOK REVIEWS

The Surgical Clinics of North America, (issued serially, one number every month). Vol. vi, No. vi, (New Jersey Number—December, 1926). 318

would be unfaithful to duty not to record the far reaching influence of the original "Dr. Mayo," father of Wm. J. and Charles. There is no question that it was his fine influence and vision of future needs that has made The Mayo Clinic one of the most useful centers of the world today. He is depicted as a physician who drove fine horses, kept rigid office hours, allowing only important emergencies to interfere with his routine, enjoyed a very large consulting practice, and was one of the pioneers in abdominal-surgery in America, performing his first successful laparotomy for ovarian tumor in 1871, and in the next thirteen years performing thirty-six similar operations. The volume is an accurate record in sequence of the important transitions of the Clinic.

"Diseases of Women," by Harry Sturgeon Crossen: C. V. Mosby Company, 1926. \$11.

This is one of the most useful and popular books on the diseases of women that has ever been edited. Though there are many books on this subject, none have continued to receive such popularity from its first to its present edition during the last twenty years.

This book is well written and extensively illustrated and contains much practical information to all doctors, and as the author says, it is a book devoted to the diagnosis and treatment of those diseases encountered both at the bedside and in the

office by the general practitioner. This policy has been adhered to in all the subjects of the book. While written for the general practitioner the specialist will find it a book of great value.—C. E. White.

HEALTH SUPERVISION

Health Supervision and Medical Inspection of Schools, by Thomas D. Wood, M. D., College Physician, Adviser in Health Education, and Professor of Physical Education, Teachers College, Columbia University, and Hugh G. Rowell, M. D., Physician to the Horace Mann Schools, Lecturer and Assistant Physician, Teachers College, Columbia University. Octavo of 637 pages, with 243 illustrations. Philadelphia and London: W. B. Saunders Company, 1927. Cloth, \$7.50 net.

This volume is intended to meet the requirements and needs of thorough, practical and comprehensive supervision of health supervision as demanded by recent modern developments of prevention, treatment and control of any and all things detrimental to the general welfare of the child of school age. It is significant that almost the first thing considered in a history of school supervision, which begins with the first recorded effort in Sweden in 1830-40, when school doctors were appointed for certain training schools, down to 1926 when Great Britain originated a plan for insurance against absence from school for illness or accident and Argentina planned to have 75 school health visitors, one for each 3,000 pupils, as well as other advanced steps tending to improve conditions of school children generally.

COMMITTEES FOR ANNUAL MEETING

MUSKOGEE, MAY 4, 5, 6, 1927

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Medical Reserve Corps Banquet.....	Hugh Scott, S. E. Mitchell and C. A. Thompson

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 Meeting Place, 1927, Muskogee.
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Meetings held on second Tuesday and Wednesday in January, April, July and October. Oklahoma City. Do not address communications concerning State Board examinations, reciprocity, etc., to the Journal or to Dr. C. A. Thompson, Secretary, but to Dr. J. M. Byrum, Shawnee, Secretary of the Board.

The applicant for license, either by examination or reciprocity shall be a graduate of a medical school, the requirements of which for graduation shall have been, at the time of graduation, in no particular less than those prescribed by the Association of American Medical Colleges for that particular year.

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Wanted—Physician wants to buy large contract mining or unopposed practice. In the states of Oklahoma or Arkansas. Will consider nothing but a first-class proposition.—H. W., care Oklahoma State Medical Jr., Muskogee, Okla.

SITUATIONS WANTED — Salaried Appointments for Class A Physicians in all branches of the Medical Profession. Let us put you in touch with the best man for your opening. Our nationwide connections enable us to give superior service. Aznoe's National Physicians' Exchange, 30 North Michigan, Chicago. Established 1896. Member The Chicago Association of Commerce.

EYE, EAR, NOSE AND THROAT PRACTICE FOR SALE—Due to fact that my health demands spending a portion of time at the sea shore, I will sell my practice here. Practice last year over \$6000.00 cash, coming from four states and many counties in Oklahoma. Sulphur, a National Park city and health resort, ranking eighth in number of visitors to national parks in U. S. \$1000.00 buys practice and good will. Office equipment at greatly reduced price.—A. S. Riddle, M. D., Sulphur, Oklahoma.

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Cherokee.....		
Choctaw.....		
Cleveland.....	B. H. Gooley, Norman.	W. T. Mayfield, Norman.
Coal (Sec Atoka)...		
Comanche.....	L. T. Gooch, Lawton.	E. Brent Mitchell, Lawton.
Craig.....	F. T. Gastineau, Vinita.	Louis Bagby, Vinita.
Creek.....		
Custer.....	C. H. McBurney, Clinton.	E. E. Darnell, Clinton.
Garfield.....	F. A. Hudson, Enid.	Paul Champlin, Enid.
Garvin.....		
Grady.....	E. L. Dawson, Chickasha.	D. S. Dawney, Chickasha.
Grant.....	A. Hamilton, Manchester.	E. E. Lawson, Medford.
Greer.....	J. B. Lansden, Granite.	J. B. Hollis, Mangum.
Haskell.....		
Hughes.....	D. W. Taylor, Gertie.	D. Y. McCary, Holdenville.
Jackson.....	Raymond H. Fox, Altus.	Earl W. Mabry, Altus.
Jefferson.....	F. M. Edwards, Ringling.	J. W. Watson, Ryan.
Kay.....		
Kingfisher.....		
Kiowa.....		
Latimer.....	T. L. Henry, Wilburton.	J. M. Harris, Wilburton.
LeFlore.....		
Lincoln.....	W. H. Davis,	J. M. Hancock, Chandler.
Logan.....		
Marshall.....	O. E. Welborn, Kingston.	W. D. Haynie, Kingston.
Mayes.....		
McClain.....	I. M. Kolb, Blanchard.	O. O. Dawson, Wayne.
McCurtain.....		
McIntosh.....		
Murray.....	J. T. Whorton, Sulphur.	Howson C. Bailey, Sulphur.
Muskogee.....	S. E. Mitchell, Muskogee.	A. L. Stocks, Muskogee.
Nowata.....	J. P. Sudderth, Nowata.	John R. Collins, Nowata.
Okfuskee.....	C. M. Blass, Okemah.	R. Keyes, Okemah.
Oklahoma.....	E. S. Feguson, Oklahoma City	H. H. Cloudman, Okla. City.
Okmulgee.....	J. P. Nelson, Shulter.	M. B. Glismann, Okmulgee.
Osage.....	B. F. Sullivan, Barnsdall.	R. J. Barritt, Pawhulka.
Ottawa.....		
Pawnee.....		
Paync.....	L. R. Wilhite, Perkins.	G. H. Gillen, Cushing.
Pittsburg.....	W. G. Ramsey, Quinton.	F. L. Watson, McAlester.
Pontotoc.....	M. C. McNew, Ada.	C. F. Needham, Ada.
Pottawatomie.....	Robert M. Anderson, Shawnee	Wm. M. Gallaher, Shawnee.
Pushmataha.....	H. C. Johnson, Antlers.	J. A. Burnett, Dunbar.
Ragers.....	Caroline Bassman, Claremore	W. A. Howard, Chelsea.
Seminole.....		
Stephens.....		
Texas.....	Wm. H. Langston, Guyman.	R. B. Hayes, Glyman.
Tillman.....		
Tulsa.....	G. W. Osborne, Tulsa.	R. Q. Atchley, Tulsa.
Wagoner.....		
Washington.....	W. H. Shipman, Bartlesville.	J. V. Athley, Bartlesville.
Washita.....	A. H. Bungardt, Cordell.	A. M. Sherburne, Cordell.
Woods.....	Elizabeth Grantham, Alva.	Oscar E. Templen, Alva.
Woodward.....	T. C. Leachman, Woodward.	C. E. Williams, Woodward.

NOTE—Corrections and additions to the above list will be cheerfully accepted.

The Selection of a Physician —

The selection of a physician for an operation or as a family doctor, is usually made with some care. We consult those who have employed physicians and are governed largely by their recommendations. But having selected a physician, we follow his advice. We trust him even to the extent of submitting to operations that may have serious results.

The point is, we trust THE MAN WHO KNOWS.

Now, doctor, the institutions and the firms advertised in this Journal were carefully investigated before their announcements were printed here. The medical products were submitted to laboratory tests, before they were accepted by the Council on Pharmacy and Chemistry.

On the same principle that patients trust you about matters with which you are informed, so your publishers urge you to trust their judgment and buy goods from the advertisers who are admitted to these pages. Other considerations being equal, you should give your advertiser PREFERENCE because you know they are believed to be trustworthy. Don't speculate or experiment! Trust the APPROVED firms and goods!

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ABLATIO PLACENTAE*

E. O. BARKER, M.D.
GUTHRIE

Accidental hemorrhage, concealed hemorrhage, abruptio placentæ and ablatio placentæ are the different names applied to the obstetrical complication treated of in this paper.

The principal pathology of this condition is the premature separation, or detachment of the normally situated placenta.

Accidental hemorrhage and concealed hemorrhage were the names given to this complication until Holmes, in an article in the American Journal of Obstetrics, in 1900, suggested the name Ablatio Placentæ, as a more scientific designation of the condition, and in 1904, DeLee suggested the name, Abruptio Placentæ.

The first writer, so far as I have been able to find, to describe this form of hemorrhage, and differentiate it from placenta-previa, seems to have been one, Rigby, in 1776, after which time there seems to have been very little effort to make any distinction between the different forms of hemorrhage during the latter months of pregnancy, until about 1878 when Goodell called attention to the difference in the two forms and distinguished one from the other.

The early writers did not seem to recognize the abnormal attachment of the placenta, near the os-uteri, in placenta-previa, but believed that it had been attached to the fundus of the uterus, and had by some means become detached and had fallen to the lower segment of the uterus.

In Playfair's Third American edition, in 1879, I find the first recent literature on this very important complication of obstetrics.

Edgar, in his work on obstetrics, 1906, treats of the subject quite extensively; and

in a recent issue of the Journal of the American Medical Association there appeared a short article on the subject.

Other authors in my library touch the matter merely and do not seem to consider the subject of very much importance.

Ablatio placentæ, is much more common than the perusal of the literature would lead one to believe.

Holmes gives the ratio as one to two hundred cases of child birth; and the rate of mortality, as regards both mother and child, according to the same author, makes it one of the gravest complications of obstetrics.

Holmes gives the mortality, as regards the mother at sixty percent, and the foetal deaths at ninety per cent.

I surely can not agree with the figures just given, that one out of every two hundred cases of obstetrics is complicated with this very serious condition; for the reason that, in a practice of over forty-three years, with the usual amount of obstetrics, I have only seen one case of the complication that was serious enough to give me any concern, or really to recognize it as such.

It is very probable that there have been other cases that were not extensive enough to attract attention; but surely there is not one case in every two hundred cases of obstetrics, severe enough to cause any such a mortality as given by the author just quoted.

The causes of this condition, according to the writers are very numerous, and they generally agree that, the principal predisposing causes, are anemia with the accompanying general weakness, of the woman, diseased condition of the decidua, nephritis or any of the other forms of the toxemias that are liable to intervene during the pregnant state.

The exciting causes are given as some trauma, such as falling, lifting, reaching up, or any thing that has a tendency to bring the abdominal muscles into sudden or violent contraction; and it is said that

*Read before the Section on Obstetrics and Pediatrics, Annual Meeting, Oklahoma State Medical Association, Oklahoma City, June 22, 23, 24, 1926.

the results of the trauma may not appear for several days.

There are two different forms of this condition; one where the hemorrhage is entirely concealed and the other where the blood finds its way to the os-uteri and shows in the vagina; the former being much more serious, as there may be no warning of the trouble until the woman is near death from shock and exsanguination; whereas in the latter form the hemorrhage is frank and proper treatment may be instituted.

The diagnosis in this condition should not be very difficult, especially if the blood appears at the os-uteri, and the os sufficiently dilated to admit the examining finger; in such a case if we do not feel the placenta, we can be sure that we have a separation of the placenta higher up; however, when the hemorrhage is concealed the diagnosis becomes much more complicated, and we must depend on the condition of the patient whose symptoms are very much the same as those produced by hemorrhage under other conditions, together with the pain in the abdomen, and if the hemorrhage is extensive an enlargement of the uterus soon appears if the blood does not escape from it.

It is said that some of the blood may find its way into the amniotic sac; while that might be possible, it would seem to me very improbable.

Rupture of the uterus is given by some writer as a condition that might complicate the diagnosis, although that surely would be very unusual.

Before the os is sufficiently dilated to admit the finger, and blood appears at the os, we cannot be sure whether we have a case of placenta-previa or a detachment of the placenta at its normal situation.

Of course, like many other conditions a diagnosis is much more easily made after the termination of the case than before.

If taken with the symptoms above given, we have, on the delivery of the foetus, a lot of well formed blood clots, and more of them on the delivery of the placenta, the diagnosis is confirmed.

As to the treatment: If the symptoms indicate the loss of much blood, the indications would be to empty the womb and secure contractions at once.

If the os is sufficiently dilated, or easily dilatable and the head engaged, a forceps delivery would be in order, and if the head

is not engaged, a version can be resorted to; if neither of these can be done a Cæsarean section should be done, if the condition of the patient will permit.

If the hemorrhage is not profuse, and the condition of the patient is good, the vagina may be packed, a firm bandage applied to the abdomen, the patient carefully watched and labor terminated in the natural way.

I will here report the only case that I have ever had that was of importance enough to give me any concern.

About ten o'clock, p. m., November 21, 1921, I received a call to see a woman six miles in the country, who, the party calling said was pregnant, but was not in labor, or threatened with miscarriage, but was coughing herself to death.

I was in the house of the patient within an hour, and found the woman in a state of profound shock, breath short and gasping, pulse very weak and very rapid, patient claiming that she could not see, in fact she was almost exsanguinated.

I was told that the membranes had ruptured a short time before my arrival and had flooded the bed and even the floor so that it had to be mopped up.

There was much tenderness over the abdomen which was very large, notwithstanding the large amount of water that had escaped; the pains were regular and labor seemed to be progressing very well.

Upon examination I found a small ill-shaped head presenting at the os which was well dilated, the head freely movable in the pelvis, and when the hand was removed it was covered with blood.

I left the bed to prepare a hypodermic injection, but before I had it ready the patient called, and on going to the bed, I found a small anencephalic foetus, together with a lot of well formed blood clots in the bed; the foetus was dead, and had been for some time and would have weighed three or four pounds.

The womb was still so large that I expected to find another foetus, but found none, and I immediately delivered a medium sized placenta, and still the uterus was large; on making pressure over the fundus, a large number of well formed blood clots were expelled, the womb contracted satisfactorily, and the condition of the patient indicated that the battle was won.

The woman went on to convalescence without further trouble.

This woman was 38 years old, of medium size, the mother of six children, four of them alive; she had usually enjoyed good health, until her present pregnancy, which was eight months advanced, when she began to feel badly, had been very weak, had dizzy spells, her sight bothered her, had blind spells, and had felt very miserable for several months.

I saw the patient the next day and found her getting along very nicely.

On taking her blood pressure I was very much surprised to find the systolic pressure 180, after the great loss of blood she had sustained.

The urine contained a large amount of albumen but no casts.

I saw this woman several times after her recovery and believe she is yet enjoying her usual state of health.

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CONDUCT OF THE AVERAGE OBSTETRICAL CASE*

CALVIN R. HANNAH, M.D., F.A.C.S.

Professor of Obstetrics, Baylor
University, College of Medicine,
Dallas, Texas.

Obstetrical patients should have a complete physical examination early in gestation. This examination should be carefully and systematically made, and the findings from history and clinical examination recorded. The parturient patient should be healthy and physically qualified to meet the extra requirement of pregnancy, and this thought should be kept in mind during the examination. Carelessness has no place in this examination, and the physician who realizes his responsibility will exercise thoroughness and accuracy in the examination of the expectant mother that she may receive worth while service. It is not amiss when considering the health of the expectant mother that attention be given to the health of the husband and that he be examined and treatment instituted for the correction of errors of habit, functional disturbances and other abnormal conditions which may exist as these may have a bearing on the health and life of the mother and babe.

The vital organs, and especially those of respiration, circulation, digestion, elimination, the glands, and foci of infection

should receive special attention in the examination of the expectant mother. An outline of diet, instruction relative to the amount and character of exercise, rest periods and social activities should be given to the patient at this time.

The unborn babe in its uterine environment must cope with conditions which may retard its development and affect its health in later life; and one of the capstones in preventive medicine during the next decade will be progress in the science of maternal welfare and a reduction of fetal and infant morbidity and mortality. A maternal welfare committee sponsored by the local county medical societies should co-operate in teaching the public the importance of obstetrical patients reporting to their physician early in pregnancy and that they remain under his supervision during pregnancy. The women's clubs, parent-teacher associations, noon-day luncheon clubs and the public press are mediums through which this dissemination of knowledge relative to maternal and infant welfare and the essential points in prenatal care may be presented.

At the first visit of the patient, a complete and thorough history should be taken and this should include a record of her menses, previous pregnancies, abortions and labor, and whether the post-natal period was febrile or afebrile. The size and sex of the baby should be ascertained, and whether still-birth, asphyxia or injury to the baby occurred. To the inexperienced, this detailed history may seem futile, but its value is readily realized by a thorough student and careful diagnostician. Histories of this character will often prevent embarrassment to the physician who knows his work but is careless in securing a complete history and in recognizing the cardinal symptoms of pregnancy that occur in the first eight or ten weeks.

The height and weight of the patient should be taken and recorded, and this compared with her standard weight. Explain to the patient what her standard weight is and that twelve or fifteen pounds above her standard weight should usually be her maximum gain during pregnancy. Overweight in pregnancy is a dangerous luxury which lowers the resistance of the patient to infection, is a factor in causing fetal injury, predisposes to pre-eclamptic symptoms and complicates labor.

After having secured and recorded a complete history, the obstetrician should

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instruct the patient at once relative to the effect which a diet rich in carbohydrates and high in protein has upon her and the fetus. He should teach her the wisdom of drinking eight or ten glasses of water per day, the value of walking and wearing low heel shoes, the importance of fresh air and sunshine, the necessity of preparing the nipples for nursing, and that inverted nipples are everted. The obstetrician should teach the patient all the pre-eclamptic symptoms and how these may be prevented. He should instruct her to report without delay any pre-eclamptic symptoms, and measures should be instituted promptly to relieve her of these complications. Weekly interviews between the patient and physician are none too often for observation of complications, instructions as to how to keep healthy and the preparation for labor. These interviews will do more to lessen morbidity and lower mortality than haphazard and indolent methods poorly executed will ever accomplish.

Six to eight weeks before the approximate date of delivery, an examination of the patient should be made to determine presentation and position, and measurements of the pelvis should be taken and a comparison made with the size of the fetus. Measurements of the fetus are almost as necessary as measurements of the pelvis, and the physician who neglects this important measure will seriously realize its value in a difficult case. The physician should be able to diagnose an over-size fetus, and for the patient who has a moderately contracted pelvis, the induction of labor may be considered to prevent complications. The study and diagnosis of the size of the fetus is essential to good obstetrics and should not be neglected.

The patient in labor should be relieved of pain just as those suffering from any other ailment should receive relief. Continued pain in labor without relief lowers the resistance of the patient, breaks down her morale and may disturb her mental and nervous equilibrium.

The patient should be prepared during the first stage of labor as if for a vaginal and abdominal operation. Bowels and bladder should be kept empty. After effacement and dilation of the cervix is fairly well advanced to four or six centimeters, morphia in one-sixth or one-fourth grains with magnesium sulphate should be given if it has not been previously re-

quired, and, then within one-half to one hour the quinin-ether-oil rectal anæsthesia may be administered. This will usually suffice for three or four hours and when possible gas may then be used. If the first stage of labor is prolonged, the rectal anæsthesia may be repeated, and in some instances morphia with hyoscin, or morphia alone, may be used until nitrous oxid can be substituted. Our patients should be relieved of pain as much as possible.

During the first stage of labor, frequent auscultation of the fetal heart sounds should be made to ascertain the condition of the fetus and not necessarily to diagnose the position of the fetus, as this should have been done previously. The fetal heart sounds are primarily to diagnose the condition of the fetus, and is a very important point to remember in obstetrics.

The patient should not be permitted to bear down until the cervix is effaced, dilated and retracted over the presenting part as this effort may cause a premature rupture of the membranes and cervical lacerations. It is true that the cervix will be broken to an extent, yet bearing down in the first stage of labor may cause extensive tears. I doubt the wisdom of giving pituitrin at any time in the first stage; and if it is given, then only in one or two minims at intervals sufficient to prevent having an accumulative effect. Rectal examinations should be made rather than vaginal; and if the latter are made, all recognized rules of technique to prevent infection should be rigidly adhered to. Rectal examinations are usually satisfactory to the physician who has utilized this method, and those not familiar with this technique may soon acquire this method by making a rectal examination and then follow it with a vaginal examination and compare the findings, and in a short time will be able to rely upon the rectal examinations in the majority of cases.

The termination of the first stage of labor is often recognized by the restlessness of the patient, and this is due to the cervix being stretched its greatest in its retracting over the fetal head, and is usually accompanied with a rather profuse mucus and bloody discharge. However, the second stage is not usually recognized until the patient says that she cannot refrain from the desire to bear down during a contraction. The obstetrician should be sure that the cervix is retracted before

the patient should be permitted to bear down. I have known instances where for a long time the patients have pulled, pushed and worried themselves into a frenzy, and on examination the anterior lip of the cervix was found caught between the cervix and symphysis, and was edematous and traumatised. If the cervix cannot be released and retracted by gentle manipulations between uterine contractions without danger of infection or lacerations, morphia should be administered and the patient allowed a period of rest. This causes her to relax, stop bearing down, and soon the cervix will retract and the patient is in the second stage of labor. Sometimes the first stage is ended and the second introduced during the same uterine contraction. In the onset of the contraction of the uterus there is no desire to bear down, but the cervix is retracted over the presenting part and at once the patient is forced to bear down and expresses a desire to defecate. This is the beginning of the second stage of labor.

At this time the patient should attempt with all her force to expel the fetus. If she is a multipara, the second stage may end with a few contractions, and especially is this so where the perineum has been broken and not repaired.

In the conduct of labor in the multipara, the accoucheur should be ready for a short second stage, which is the usual. In the primipara, the second stage is usually longer than that of the multipara, yet many times the second stage may not last thirty minutes in the patient whose prenatal care has been efficiently conducted by the prevention of an oversize fetus and for the patient who has not been exhausted during the first stage. The second stage in the primipara may last one or two hours; and if delayed longer, it is usually due to a mechanical obstruction, oversize fetus, contracted pelvis at inlet or outlet, mal-position with extension, or sometimes a perineum that is rigid and dilates very slowly. To protect the perineum during delivery, flexion to an extent should be maintained until the parietal bones or eminence have been delivered, and this is best completed by pressure on the vertex. I am fully aware that it is taught and practiced that pressure on the perineum over the bregma and brow will maintain flexion and protect the perineum, but in my experience I have found that this is incorrect as it requires that the hand be near or over the anus, a field that is not asep-

tic, nor is the method as efficient in protecting the perineum as pressure on the vertex because rapid extension cannot be prevented.

An early indication of a laceration is the trickling of blood over the perineum between uterine contractions after pressure has been released by the head receding. In a primipara, a perineotomy often is an ideal procedure. Just to say which perineum will or will not tear is very difficult. Is it well in many instances if the fetal heart sounds are irregular to wait for slow dilation of the perineum? It is in this sort of cases where the perineum apparently is not torn, but later there is found a lax, gaping vagina which portrays the fact that probably the muscle fibers have been broken or torn from their attachment. I cannot definitely say which perineum will not tear, but to one who feels sure of his ability to repair a clean cut wound or to one who is willing to qualify for the work, I would say that a central episiotomy is justifiable. When this is done, the head, with the next contraction or two, will, by maintaining flexion, glide out and over the perineum. I know that it is claimed that with a central episiotomy the incision is likely to pass on into the rectum. If one thinks this may occur due to the excessive size of the fetus or malposition, a mattress - suture may be placed above the sphincter ani before delivery as a safeguard to prevent further tearing.

The repair and the results of an episiotomy are more successful than a laceration with tears in various directions. The repair should be made at the time of delivery. The mucous membrane should first be closed by interrupted sutures. Interrupted sutures of twenty day chromic catgut should pass around the levator ani and be tied securely, but not tight; otherwise necrosis may occur from pressure, the field may become infected, break down and result in non-union of the tissues. These sutures may be buried by a continuous suture and the skin closed by a subcuticular suture of silkworm. One common error is the tying of the stay sutures too tight, thus depriving the tissues of their blood supply. The only after-care necessary for this field is that of keeping it clean with either lysol solution, or even soap and water.

The third stage of labor should be divided into two stages, first, separation of the placenta, and, second, the expulsion.

The separation has usually taken place when the fundus has ascended in the abdomen up near the ribs. One should remember that contractions of the uterus continue during the third stage very similar as in the first and second stages. This is absolutely normal. Only occasionally are there indications for the expulsion of the placenta before its separation, and this is when the bleeding is profuse. It is not unwise to wait until the cord has quit pulsating, for during this time if the baby does not get any of the blood, the placenta has been given an opportunity to separate. Where necessity does not demand immediate ligation, tying of the cord is a good practice as still more time is given to the uterus to adjust itself to its contracted condition and its preparation for expelling the placenta. A well conducted third stage of labor is as essential to the welfare of the mother as that of the first and second stages. I do not think it necessary to give pituitary extract in the third stage of labor, for if the labor has been properly conducted, there should be but little bleeding and indication for it.

The new born baby should not be neglected. In Baylor Hospital we have adopted the system of delivering the baby into a warm sterile pad, and this has probably been the means of lessening shock to the baby, is a treatment for asphyxia pallida and prevents loss of heat or the lowering of body temperature of the baby.

After delivery, the patient is returned to her warm bed; the uterus is held for an hour or more; the room darkened and well ventilated, free from guests and the family; morphia or sodium bromide is given for pain or restlessness; the patient is advised to sleep and rest for a time, and that she may then turn on her sides. The next day she may assume a prone position frequently. Light diet is ordered from the beginning. The bladder should be emptied often enough to prevent distension. If the patient cannot void, catheterization should be resorted to, as this is not as dangerous when aseptically done as over-distension which may cause a break in the mucus coat of the bladder and be followed by cystitis. No purgatives are given to the patient for two or three days, and then only a very mild laxative may be given at night, or an enema may be used. Castor oil should not be given unless indicated for some special reason.

For the first thirty-six hours the baby is put to the breast every six hours, and thereafter every three hours. The breasts should be supported by a binder snugly applied, but not tight. The nipples should be protected by sterile gauze. Cracks in the nipples should be touched with a five per cent silver nitrate solution or an ointment of two per cent yellow oxide of mercury may be used. If bleeding, rest the breast by using the other breast until the nipple has improved and healed. The mother should be taught that with regular nursing the breasts will function better by secreting more and better milk for the baby as the mammary glands are habit-forming organs. This knowledge is very beneficial and successful if given in a way that can be understood.

The patient should be taught to change her position in bed, as posture assists materially in involution of the uterus, drainage and rest. The patient may be permitted to sit in a chair when the uterus is in the true pelvis and the flow of blood has ceased and this is usually near the end of the second week after delivery. The patient may walk about the room and house during the third week. During the second and third week she should assume the knee chest position. During the fourth week she should walk on her hands and feet, continue the knee chest position, and rest several hours during the day. She should have a wholesome, well-balanced diet, and not necessarily partake of an unusual amount of milk. Before the dismissal of the patient, a vaginal examination should be made, and any mal-position or cervicitis corrected and treated, and she should be instructed to report for another examination later on.

CONCLUSIONS

1. All obstetrical patients should have a complete physical examination early in pregnancy to detect any abnormality.

2. About the twenty-eighth or thirtieth week of gestation, an examination to determine presentation of the fetus should be made, and measurements of the pelvis should be taken.

THE TREATMENT OF PELVIC INFECTION*

ALBERT C. HIRSCHFELD, B.Sc., M.D.
OKLAHOMA CITY

The subject of pelvic infection is an extensive one, but as this paper is purely a clinical one no effort is made to classify the various forms. As it is our purpose to discuss only the more prevalent types of pelvic inflammation we feel that it can best be accomplished by a discussion of those cases of infection produced by some form of intrauterine manipulation or some phase of childbirth. We shall therefore omit any further mention of other forms of pelvic infection, as tubercular, malignant or other forms transmitted through the blood stream. Nor is the subject of appendicitis included, though the appendix is frequently found in the pelvis, at least in the female.

With few exceptions it may be said that the causes of pelvic infection in the female are three; namely, abortions, or attempts at the same, childbirth and gonorrhea. The third mentioned cause frequently, if not usually, operates in conjunction with one of the other two.

While the gonococcus is unquestionably the chief infecting agent in the great majority of cases of pelvic infection, we feel that most cases, at least most acute cases, are the result of a mixed infection and traumatism, and especially the latter. While it is no doubt true that the gonococcus may burrow through the vaginal and uterine walls and reach the adnexa, the pelvic peritoneum and cellular tissue through the lymph spaces, we doubt if this often happens except after the protecting mucosa has been denuded or traumatized by some form of instrumental procedure. If pelvic infection results from gonorrhea, without any form of intrauterine traumatism, it is generally a result of very slow direct extension through the uterus and tubes. In the meantime the patient is being vaccinated or immunized naturally and the result is usually nothing more than a mild chronic salpingitis. But let this indolent infection be excited by traumatism and mixed with the usual pyogenic organisms and we immediately have an acute and more or less

virulent pelvic infection with pyosalpinx or tubo-ovarian abscess.

Therefore, the most important and valuable of all treatment being prophylactic, we enter an earnest plea against promiscuous curettage, or any other form of intrauterine or intracervical manipulation. We should always bear in mind that the deadly gonococcus too often lies dormant where least expected and only waits for the doors of the uterus and pelvic structures to be opened by the accommodating uterine sound, dilator or curette. After a careful observation of this subject for a number of years in both private and clinical practice, we are of the firm opinion that the majority of cases of pelvic infection are directly brought on by some form of intrauterine manipulation, varying in degree from the alleged innocent introduction of a prophylactic stem pessary to the vilest form of criminal abortion.

I think it is now agreed that the less one does in a surgical way for an acutely infected uterus the better chance will it have to wall itself off from the invading hosts by a more or less impregnable leucocytic wall. If one could determine that the body of the uterus were infected and that the infection is entirely limited therein, it might not be bad surgery to remove the organ. It is doubtful, however, in view of the nature of these infections, if a hysterectomy, without the sacrifice of some of the adnexa, is ever indicated. But to remove the lining membrane, as done in the average curettage, is to remove that part of the uterus chiefly concerned in the combating of infection and leave the rest of the organ mercilessly exposed to the enemy. This procedure frequently results in a definite pelvic infection, though it may escape the operator's attention if it is not of a virulent type and develops slowly, and more especially if the physician does not follow up his cases closely.

The management of acute pelvic infection should be essentially conservative. In other words, we should resort to surgery only after the complete localization of the infection and the subsidence of all evidence of generalized abdominal and blood stream infection, except in those occasional cases of frank abscess requiring drainage. In other words, every case of acute pelvic infection is treated as a case of peritonitis, actual or potential. The patient is hospitalized, if at all possible; but if

*Read before the Section on Obstetrics and Pediatrics, Annual Meeting, Oklahoma State Medical Association, Oklahoma City, June 22, 23, 24, 1926.

this is not possible, we strive our best to imitate hospital treatment in the home. The patient is given sufficient morphine to secure complete rest and relaxation and the same is repeated as often as necessary to keep her quiet and relaxed. To assist in localization, as well as to protect the upper abdominal areas, the patient is propped up in Fowler's position or modified Fowler's, or else the head of the bed is elevated from eighteen to twenty-four inches. This will often be found more comfortable than the Fowler bed frame, especially if one or more pillows be placed between the patient's feet and the foot of the bed, to keep her from slipping downward.

In the management of these cases great care should be observed in the making of vaginal examinations, and as few of these should be made as possible. An examination should be made only with a sterile glove under the strictest aseptic precautions and with the utmost gentleness. While these cases are of course infected, the greatest harm may nevertheless be done by introducing mixed infection as well as by traumatizing the delicate pelvic tissues. The writer has only recently had a case in which a so-called thorough vaginal examination was made on two occasions by two different consultants. Each examination was extremely painful and was followed by a definite exacerbation of the patient's condition, prolonging her stay in bed and no doubt extending the area of infected tissue. And yet all the information gained might have been obtained by a study of the patient's clinical and laboratory record, a careful abdominal palpation and nothing more than a light rectal touch to ascertain the possible presence of cul-de-sac bulging.

When physicians learn that a more satisfactory pelvic examination can be made with but one finger in the vagina (or rectum in the case of young girls and certain others) and a light abdominal pressure instead of the old - fashioned method of two fingers in the vagina and two hundreds pounds of pressure above, then will ailing women cease to shun examinations as they now do, and the tremendous sales of Viavi, Wine of Cardui and other nostrums will materially decline. In other words, we should develop a Jimmy Valentine touch rather than a Jack Dempsey punch.

While the above rest and localizing treatment is in progress, a careful check

should be made of the blood count, pulse and temperature, but especially the latter. While a frequent blood count is very helpful, it is not indispensable and will generally be found to conform to a certain extent to the temperature range. If the pain, tenderness and induration become localized to the pelvis and yet the temperature and blood count remain up more than a reasonable length of time, the presence of free pus should be suspected, either in the form of a tubo-ovarian or a cul-de-sac abscess. Surgery is then indicated provided the patient's general condition and resistance appear good. A preliminary course of alkalization is recommended.

Needless to say, cathartics are not used in the acute cases and even enemata should be used with the greatest caution, as there exists the closest relation between inflamed pelvic organs and the rectum, sigmoid and often the upper colon, cæcum and occasionally even the small intestine.

The writer has had very pleasant results in certain cases of pelvic infection with the intravenous use of mercurochrome. This seems especially helpful in those cases of post-partum, or post-abortion infection in which the infection is limited to the uterus, or where there seems to be diffuse peritoneal infection and absorption, as well as in frank cases of blood stream infection. Of course this treatment has little effect on definite massed pathology but often does seem to hasten localization and combat the general septicæmia or toxæmia. It is worthy of consideration in all cases with constitutional symptoms. We use a one per cent solution in doses of from five to twenty c.c., and while we sometimes get a severe reaction we have never felt that we did any real harm with the same. On the other hand, we feel that we have saved a few cases of severe post-partum septicæmia that would otherwise have been lost.

Nor should one overlook the possibilities for good in appropriate serum or vaccine treatment, especially indicated in those cases in which the infecting organism can be determined by intrauterine swabs or blood cultures.

Needless to say, the management of these cases must include a comprehensive regimen of hygienic and dietetic supervision, the latter varying from nothing but rectal alimentation in the very acute cases to a highly nourishing diet in the subacute and chronic cases. In the use of proctoclysis, the writer usually uses a solution of

glucose and sodium bicarbonate but other men seem to get as good results from a plain solution of soda or normal salt. It may be of interest to note that the use of a solution of the tribasic citrocarbonate is less irritating to the rectum than the sodium bicarbonate solution.

After the subsidence of the acute symptoms, the use of the therapeutic hot douche, with emphasis on the "hot," given slowly, with low pressure and with one or more gallons of water, will be found quite helpful.

In the chronic or ambulatory cases, we should not forget that a great deal of good can be accomplished by a careful, conscientious, consistent course of local depletion, including not only the so-called office treatment but a thoroughly co-operative plan of home treatment, with properly administered therapeutic douches given as above outlined. While the casual hit and miss tampon treatment is almost worthless, a well carried out co-operative program may do a great deal in the way of localizing the infection to the tubes, relieving many of the symptoms from the congestion of the surrounding organs and tissue, and in an occasional case, may even make surgery unnecessary. While we do not wish to go on record as saying that local treatment will ever cure a definite case of pelvic infection, we do know that it will often relieve much of the symptomatology and will as often make an operation safer, easier and less extensive.

Finally, however, we must admit that for permanent relief the great majority of cases must ultimately resort to surgery.

And with the infection properly localized and walled off, and the patient properly built up and prepared, a laparotomy is the logical procedure and offers very satisfactory results.

Discussion: F. L. CARSON, M.D., F.A.C.S., Shawnee.

While I realize that Doctor Hirshfield's statement is true, that frequently gonorrheal infection of the female pelvis shows secondary infection, I can not believe this condition is chiefly due to trauma. As this secondary invasion is usually due to some of the colon group, it seems to me that the organism gains entrance from the contiguous rectum.

While the paper does not deal primarily with infected abortions, the Doctor touched on this subject. No one deprecates the use of the curette more than I do, but I

can not subscribe the latest vogue of absolute non-interference in this condition. It appears to me unsurgical, and I would like to see a doctor with nerve enough to remain inactive, with a patient who has a retained placenta, associated with rigors and high fever, when simple removal, either with the finger or placenta forceps will cure the condition.

I wish I had Doctor Hirshfield's confidence in mercurochrome. I have tried it rather faithfully, only to discard it.

I do not feel that more than half of the gonorrheal infections of the pelvis will come to operation, if careful treatment is instituted. We have all seen "frozen pelvis" clear up and subsequent pregnancies occur. These patients should be hospitalized early and kept there late, not only that they may receive the proper care and rest, but most important that they refrain from sexual excitement.

Too much stress can not be laid on gentleness in examination, as the Doctor has pointed out.

PUERPERAL ECLAMPSIA*

D. F. STOUGH, M.D.
GEARY

As there is no disease more shocking to the physician or more tragic to the family and friends than eclampsia, we cannot discuss it too frequently nor too thoroughly, that we may be able to educate the expectant mother to have herself closely watched and to impress again and again upon the attendant physician that he must not neglect to give due weight even to the minor symptoms of this dread malady.

It is regretable that the cause of the toxemia has not been definitely determined. Whether the cause is a kidney lesion, hypofunction of the liver, autolysis of the placenta, focal infections, toxins from the foetus, disturbance of internal gland function, persistent activity of the mammary glands, abstraction of calcium salts, a poison from absorption of some intermediary product of protied metabolism hemorrhagic infarcts of placenta, or an anaphylactic reaction, I do not pretend to know nor will I discuss further than to say that each has strong advocates and any of them may prove the correct cause, or it may be a combination of two or more of them. I will not attempt to discuss the symptoms nor treatment but will hasten on to the report of a case. I will digress sufficient

to call attention to my experience in a case a few years ago when there was so much albumen that the urine would boil solid in a test tube. I placed the woman on alkalies, and after a few days the urine did not show albumen when boiled. I made examinations daily for three days, then added an acid to the urine before boiling and it again boiled solid.

CASE REPORT

Mrs. A. W., primipara, aged twenty, weighing 210, had married against her parents' wishes. She remained at home and kept her marriage and condition secret from her parents. She entered labor at eight months and then acquainted her parents with her carriage and condition. Upon my arrival she was apparently normal except that she complained of considerable epigastric pain, very slight headache, and there was a little oedema of the lower limbs. Pains were coming normally. She had not felt motion for two days and I could not find any signs of foetal life. Labor was rather slow, about eighteen hours, one small dose of pituitin was given, about three minims. Child was delivered under chloroform anaesthesia from a medium low forceps position. Child was in a L. O. P. position. There were no lacerations of the soft parts. Placenta was expressed without difficulty. She vomited several times during labor, the vomitus burning her throat. The following day, she had severe epigastric pain, pulse sixty, temperature ninety-seven, bowels had moved freely and attendants reported that her kidneys had acted freely several times. At times her vision was poor and recognition of persons was difficult. I gave her soda bicarbonate for the burning pain in stomach. Almost at once she vomited about a quart to three pints, with a very sour odor. A white foam quickly formed on the vomitus a third of an inch thick and so brittle that it would break into cubes. As her kidneys were active and she showed improvement, I did not call the following day. I was called again on the third day after confinement and she was near coma. She was very restless and although attendants reported her kidneys as functioning freely, I catheterized and drew off 45 ounces dark urine. It had a specific gravity of 35 and only a trace of albumen. Temperature and pulse normal, systolic blood pressure 160. Her bowels were inactive and vomiting frequent. On the following day, the fourth after confinement, she was in complete

coma, very restless, kidneys fairly active, the bowels were inactive although cathartics and enemas were used. She had her first convulsion on the afternoon of the fifth day after confinement. It was a tonic convulsion lasting fully two hours. She then had her first rise in temperature and by evening it reached 104, axillary. She began vomiting large quantities of black bloody vomitus. The nurse reported it as two quarts. She had a second and last spasm during the night and the axillary temperature reached 106 before her death in the morning. About two hours before death she began purging large quantities of black watery, and very offensive material and containing some solid bread masses. Lochia remained normal and no milk appeared in the breast.

While I have seen about fifteen cases of eclampsia, this case was unusual to me in the late development, the convulsions being tonic instead of clonic, the small amount of albumen in the urine, the continued activity of the kidneys, the excessive black vomit and bloody purge.

The treatment used was sweating, high enemas, alkalies, cathartics and diuretics. Luminol, chloral, and bromides were used as nerve sedatives. One dose of morphine was given.

This case and one other similar to this case under great mental strain, leads me to believe that the mental state had something to do with the toxemia, at least, aggravating the condition. Also I wonder if we have years, probably following, flue epidemics or some other conditions, that eclampsia is more frequent. The first ten years of my practice, I did not see a case nor hear of one among my colleagues. About ten years ago, we had not less than six cases around Geary in one year. Ten years passed and not more than three cases, and now within a year we have had not less than five cases.

ROENTGEN RAY STUDY OF THE NASAL ACCESSORY SINUSES*

E. C. WILSON, M.D.
OKLAHOMA CITY

To make an intelligent Roentgen ray study of the sinuses it is necessary to understand the normal development and the

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influence of abnormal development on the normal resistance to infection.

EMBRYOLOGY

The ethmoids begin as slight depressions in the lateral nasal wall at the fortieth day, the antrum at eighty-five days, the sphenoid at one hundred days and the frontal begins to develop in the vertical plate of the frontal bone at one year.

These depressions increase as pneumatization progresses, with the original depression remaining as the ostium and the mucous membrane invaginates lining the sinus. The ethmoid is fully developed at puberty, the sphenoids at ten years, the frontal at fourteen to twenty-five years.

Ethmoid cel's have been recognized as early as the sixth foetal month and sphenoids at birth, but the earliest I can find any record of a clinically suppurating sinus is Dean's case at two and one-half years, and Oppenheimer's case at three years.

You have persistent infantile sinuses with a few thick walled ethmoids, a small thick walled sphenoid, an absence of frontals, and Reschreiter even reports four cases where there is an absence of the antrum. However, the antrum is absent less than any other sinus.

In the persistent infantile sinus the mucous membrane does not resist infection like a normally developed fully-pneumatized sinus, neither is there the normal secretion, and the mucous membrane is more often atrophied and followed by osteitis.

Infantile sinuses are found more often in children who have syphilitic parents, while in acromegally you have large sinuses, and in hypopituitary you have smaller sinuses. Pacini has shown that muscular robust men have larger sinuses.

The largest sinuses I ever studied were on a Philippino, but I have not had the opportunity of studying any more of his race, and I have never been able to find anything in anthropology to lead me to believe it is a racial characteristic.

ADVANTAGES OF THE ROENTGEN RAY

I think the sinusologist will appreciate the Roentgen ray more in cases of severe alarming infections in the region of the nose, orbit and cranial cavity, where it is imperative that a correct diagnosis be made at the earliest possible minute and intelligent treatment started.

I think the most useful help the Roentgen ray is to the men of this section is where you have patients that have suf-

fered pain and headaches for years. Some of these poor sufferers have consulted every specialist in ethical medicine that may relieve headaches, to say nothing of the optometrists and jewelry men, and in many cases simple and short treatment will relieve these patients after the trouble is found in the sinuses.

No case of obscure focal infection is properly examined until a Roentgen ray study is made of the sinuses. Many injuries to the sinuses are found where there is traumatism to the head. A tooth should be eliminated as a source of infection of the antrum by making pictures of the teeth on the affected side.

In the beginning many thought that the Roentgen ray findings were only of value in the frontal and antrum and that they did not get reliable information about the ethmoids and sphenoid, but by constant improvement in Roentgen equipment and technique dependable information is secured. Coakley, Killian and Albrecht state that Roentgen ray findings are reliable and that they invariably verify the Roentgen ray findings at operation.

Skilern states that the Roentgen ray is almost indispensable to study the sinuses before operating, for there may be even a complete absence of the sinus; they are very variable in size, shape, and they may be multilobular, they may have pockets, divisions, projections, septa and malposition of the normal limits or divisions, for one frontal may be on the other side of the body or partially in front of the other.

The sinusologist should make a thorough study of a sinus before operating, noting any peculiarity or atypical cells, and should have the Roentgen picture in suitable position and properly illuminated for reference during operation.

Many prefer to leave an instrument in place for a picture to avoid leaving cells or going into the cranial cavity. It is always a good thing to take a picture after an operation to see if the surgeon has completely removed all the pathology.

Where you have a slight uniform increased density over one or more sinus you should expect a congested or acute inflammation that has not reached the purulent stage, or a chronic inflammation with thick mucous membrane and no pus the history should differentiate between the two.

Where you have a marked increase in density where not even the bone struc-

ture of the walls of the sinus can be visualized, you will think of a sinus full of pus, granulation tissue, a marked increase in the mucous membrane completely filling the sinus, a syphilitic or malignant mass.

You will have to take the history, nasal examination, Wassermann law of averages and often open the sinus, before you can differentiate between them. In malignancy you can often see where the bone is involved or see the tumor mass if the sinus is not completely filled.

Where you have polyp, mucocele or cyst that does not fill the entire sinus you will find a mottled appearance and the bony wall of the sinus will be visualized with an area of normal density between the wall and the mottled area.

It is often possible to see a thickened mucous membrane along the nasal side of the antrum.

When there is not enough pus to fill the sinus you look for a fluid level.

In cases where you have osteo myelitis, traumatism or necrosis of the bone allowing infection, or air into the orbit or cranial cavity, you can often visualize the area of bone involvement.

It is well to bear in mind that the Roentgen ray is only an aid in diagnosis to the sinusologist for he must take the history, the nasal examination, the laboratory report, and after studying the pictures with the Roentgenologist he must make the final diagnosis. If you recognize the limitations of the Roentgen ray it furnishes valuable information.

CASE REPORT

K., a doctor's son, 13 years old, with alarming and very virulent infection that resembled most from clinical examination an orbital cellulitis. He had severe pain, temperature 105, pulse 120, white blood count of 20,000, and the Roentgen ray showed an involvement of all the sinuses on one side.

Treatment was started immediately and the boy recovered, but had a necrosis of the palate, and from clinical examination it looked like he would lose all the teeth on the superior maxillary on that side, but after Roentgen ray study it was decided they could be saved.

A playmate of the boy, swimming in the same pond, died in two or three days, apparently from the same infection, so it is at least probable that we were instrumental in saving a member of the doctor's family from an early death.

FRACTURES OF THE FEMUR*

H. D. MURDOCK, M.D.
TULSA

To the patient, a fractured femur is a severe injury and may result in permanent disability. In considering the immense number of mechanical devices used in treating fractures of the femur, it would seem that all results should be good. The two distinct methods of caring for these fractures consists of the "non-operative" and "operative." In the non-operative method we have devices applied to the skin which affect the fracture only indirectly. These consist of splints of various types, plaster paris and adhesive plaster. In the operative method we have mechanical devices applied to and within the femur. Within the femur we have the intra-medullary bone plug, in the cortex the autogenous bone grafts. On the surface of the femur autogenous grafts, beef bone plates and metal plates. Around the fracture we have the Parham Martin Metal bands, Kangaroo tendon, cat gut, wire, nails, screws and pins both metal and bone. Then we have the ice tongs and pins fastened directly into the bone as a means of promoting accurate coaptation.

Radiograms of all fractures are of the utmost importance. They enable us to know with a great degree of accuracy the approximation of the ends of the bone and its alignment. All fractures should be X-rayed at two angles, usually at 90 degrees, laterally and antero-posteriorly before and after reduction. All fractures should be re-X-rayed as often as necessary.

In all fractures be sure of the following points:

1. That the ends are in apposition, or at least in partial end contact. Any transverse fracture in which the ends are overlapped 30 per cent will give an excellent result, and a radiogram taken after the fracture has united will only reveal a slight imperfection in alignment.

2. The femur must not be shortened. Frequent measuring of the leg from the anterior - superior spine of the ilium to the internal malleolus with both legs in symmetry to the body will detect shortening. The tension of the ten long muscles of the thigh with the fascia causes the shortening.

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3. The femur must not bow outward. Abduction of the leg should prevent this deformity.

4. The femur must not bow backward at the line of fracture. Prevent this by proper elevation with pads posteriorly at the seat of fracture.

5. Prevent external rotation of the knee and foot below the fracture. Keep the patella and foot vertical by means of any standard foot support or by means of adhesive plaster attached from the thigh to the splint.

6. Mobilize the knee joint daily after the first three days. This is a very important point and is frequently neglected. Nothing is better for easy mobilization than a Thomas splint with a Peerson attachment. The Peerson frame is attached to a Thomas splint under the knee joint, and the leg rests on this frame. The leg can now be changed almost painlessly, daily, to a different angle and thus insure a freely movable knee joint. If the knee joint is not moved daily there is always more or less lack of mobility when the patient first attempts to move this joint. Fortunately in younger patients the knee will entirely regain its normal range of motion in a few months.

7. Mobilization of the ankle joint must be carefully attended to by admonishing the patient to daily flex and extend the ankle many times. We do not have much trouble with this joint. The foot must be prevented from remaining in the equinus position by keeping it at right angles to the leg.

In fractures of the upper 3rd of the femur, the upper fragment is usually displaced anteriorly, due to the traction of the Psoas and Iliacus. These muscles originate on the pelvis and consequently tend to flex the upper fragment. In fractures of the lower third of the femur the lower fragment tends to be retracted posteriorly, due to the tension of the Gastrocnemius, Soleus and Plantaris from their insertions on the Tibia and Fibula.

To prevent shortening of the femur we have two efficient methods of traction, one cutaneous and one skeletal. The cutaneous method consists of either well applied adhesive plaster or the glueing of muslin to the lateral surfaces of the thigh and leg. The muslin should be fastened with Sinclair's glue. In applying this extension the following points are taken from Sinclair's paper:

1. The skin should not be shaved.

2. Remove all grease with soap and hot water containing 4 grams of sodium carbonate to the pint.

3. The skin is dried and the glue is applied evenly and thinly. All the hair of the limb being brushed in an upward direction. The skin should be warm when the glue is applied, otherwise slipping is liable to occur.

4. Two strands of gauze eight layers thick are now laid smoothly on the limb on the mesial and lateral surfaces, and a loosely woven bandage is applied commencing four inches above the maleoli; and ending just below the knee joint. If any wrinkling of this extension or any burning sensation occurs it should be changed immediately. This will adhere tightly to the skin and permit very efficient traction.

If the reduction of the deformity requires unusual traction then we should resort to skeletal traction. By this, I mean direct force applied to the bone. This is by far the most efficient traction we have. For by applying a mechanical device to the bone we have excellent control of the fracture, which we do not have when adhesive plaster or bandages are applied to the skin. The effect of skin traction on the bone is only secondary, after passing through the skin, subcutaneous fat, muscles and fascia. Skeletal traction is applied under local or general anesthesia by either passing a pin through the bone or by applying tongs with the points embedded into the cortex on each side of the lower fragment, just above the condyles. A light blow with a hammer will embed the points, and the handles of the tongs should be securely fastened to prevent slipping. Infection is very unusual. Sufficient weight is attached to the tong handles to adequately reduce the fracture, five to twenty-five pounds are sufficient. The knee can be easily moved daily with this device.

With a Balkan frame, skeletal traction, a Thomas splint with a Peerson attachment for mobilizing the knee joint, we have excellent control of nearly all fractured femora.

All fractures that cannot be properly reduced should be subject to an open operation. Some will need merely the placing of the ends of the bone together, others will require the use of Kangaroo tendon tied through appropriately drilled holes.

Metal plates should not be used, but beef bone plates with beef bone screws are an excellent substitute. I strongly recommend the metal Parham Martin band in those fractures with pointed ends. These fractures have a great tendency to override, and a metal band is a simple easily applied device which will hold the fragments in accurate position. Kangaroo tendon may be used on a fracture of this type if one uses very heavy tendon.

In ununited fractures either the Albee Autogenous inlay or the massive Autogenous Graft should be used. Physiologically they are almost alike, but mechanically they are applied in a slightly different manner. Albee's inlay is applied in the bone cortex, while the Massive Graft is applied on the bone. In operating an ununited fracture the incision should be adequate to easily expose at least four inches of each fragment. Enough of the bone ends are removed to give a fresh surface. The Periosteum is peeled back and the surface of the bone is either shaved off with a broad chisel or removed with a saw. The Medullary cavity is thoroughly chiseled out. Then from the flat surface of the tibia a broad flat piece of cortex is removed, including the periosteum. With a motor saw a piece of endosteum is removed from this graft and should be placed in the medullary cavity. This places many normal osteoblasts in the medullary cavity. The bone graft is fastened securely to the prepared surface of the femur either with beef bone screws or with autogenous bone pegs. Kangaroo tendon may be tied around the graft if it is thought necessary to reinforce the bone screws or pegs. The periosteum is then replaced over the graft. It is very important to place many bone chips in the line of fracture. These form many new centers of osteogenesis.

For a satisfactory result, the American Surgical Association has six requirements.

1st. It must be established that firm union exists.

2nd. That the longaxis of the two fragments is directly continuous, or on parallel lines, thus preventing angular deformity. Concisely speaking, a straight leg.

3rd. That the anterior surface of the lower fragment maintains nearly its normal relation to the anterior plane of the upper fragment. Thus preventing undue deviation of the foot from its normal position.

4th. That the length of the limb is equal to the other limb, or that the amount of

shortening falls within the limits found in normal limbs, namely from one-eighth to one inch.

5th That lameness, if present, is not due to more than one inch of shortening.

6th. That the conditions attending the treatment prevent other results from those obtained.

FRACTURES OF THE ELBOW JOINT*

I. N. TUCKER, M.D.
TULSA

We feel today that we are getting better results than we did yesterday in fractures of the elbow joint. This can be attributed, without a doubt, to our superior means of positive diagnosis, particularly the x-ray, and to frequent reports which furnish the means of comparison and the subject for discussion of treatment and results obtained. The classification, definition, description, etiology, signs and symptoms have changed little, therefore the primary intent of this paper is to promote discussion of a group of fractures which are very common and of great importance in this day of frequent malpractice suits and compensation for resultant disability in industrial work.

Let us assume that we have a patient brought into the office with an apparent injury to the elbow joint.

Our first consideration should be the patient. The next, a good functional, and so far as possible, a perfect anatomical result which does not unnecessarily subject the patient to painful manipulations and operative procedures. It causes the surgeon much satisfaction when he is able to forecast the nature and extent of the injury, but I sometimes doubt the advisability of such diagnoses, when the injured elbow and the patient's comfort are considered. Inspection will usually be all that is needed in addition to the x-ray. The latter should be employed in practically every injury to the elbow joint which the surgeon has occasion to see, not only for his protection, but to insure that incomplete fractures will not result in delayed and limited joint function or impaired epiphyseal development.

After the diagnosis has been made, the next consideration will be the treatment best suited to the patient after we review

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in our minds the following: patient's age, general physical condition, occupation, nature and extent of injury, and the presence or absence of any complications.

Children will get a good functional result with a less perfect anatomical reduction than an adult. Non-union is rare if there is any reasonable approximation of fragments. Therefore operative treatment is not frequently employed.

It is advisable to use an anesthetic in all cases which require any manipulations to secure reduction, so that the soft parts may be spared any unnecessary trauma and more accurate apposition attained.

Early reduction is preferable. However, if marked swelling is present when the injury is first seen, we must keep in mind the possibility that any additional injury to the joint coincident with immediate reduction may cause enough swelling to seriously damage the soft parts and even threaten the blood supply of the forearm.

Injuries accompanied with dislocation of the radius or ulna form an exception. There is no question as to the wisdom of early reductions in these injuries, that we may minimize the swelling, and restore the structures forming the elbow joint to their normal relations. Open reduction is also indicated as soon as the surgeon decides that it is the treatment applicable to that injury, unless there are complications which contra-indicate such treatment at that time.

Loose fragments of bone which are free in the elbow joint should be removed early. Should the head of the radius resist all efforts at reduction, excision or open reduction with suture are indicated.

If it is impossible to secure some coaptation of a fractured olecranon, the best results are obtained by early open reduction and suture, catgut if the periosteum is available, and kangaroo tendon in the other cases. Seldom is it necessary to use any non-absorbable material about the elbow joint. The single exception would be a fracture involving the lower end of the shaft of the humerus which has resisted other open means of reduction including traction, usually an oblique supra-condyloid fracture.

After reduction, how shall we retain the fragments in their proper place? In fractures about the elbow joint we may form a rule that is applicable to all fractures, namely: The best position of the proximal and distal extremities compatible

with the most perfect anatomical reduction, least danger to the soft parts, firm union, and comfort to the patient. In order to meet these requirements it may be necessary to observe the position under the fluroscope — or even x-ray, in more than one position. Occasionally absolute recumbency is indicated.

All fractures except those of the olecranon, are usually best retained by flexing the forearm on the arm at an acute angle. In the case of an injury to the external condyle and head of the radius supination of the forearm is advised. Complete pronation is secured in those involving the internal condyle. Very often a position slightly less than the acute angle will be found which is safer and more comfortable, especially until the swelling in the region of the elbow has subsided. Fractures involving the olecranon are held in position by the forearm being extended, the degree depending upon the position of the olecranon process. In an incomplete fracture with no tendency to separation when the forearm is flexed at a right angle, there is no indication for the patient to carry his arm around in extension. The same is true in the case of a fracture of the coronoid process of the ulna as regards acute flexion.

When we consider the means of retaining our position, in my judgment, the best apparatus is the one which complies with the requirements of our rule mentioned. This apparatus will vary widely depending upon the nature and extent of the injury, and the experience of the surgeon. Therefore, no attempt will be made to select the one best adapted to every possible fracture involving the elbow. However, I do feel that it is fitting for us to remember to pad our splint well, to visualize the amount of swelling likely to occur during the period between our inspections—which should be frequent especially during the first week, and to protect the skin surfaces which are placed in contact.

Early passive and active motion of the elbow joint is, without a doubt, desired in all cases in which there is no marked reoccurrence of the deformity and no undue amount of pain and swelling. Light massage of the muscles is very beneficial.

If I am successful in generating some discussion by those whom I recognize as much more capable than I to speak of this important class of injuries, the purposes of this paper will have been fulfilled.

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DR. CLAUDE A. THOMPSON.....Editor-in-Chief
Barnes Building, Muskogee, Okla.

DR. P. P. NESBITT.....Associate Editor:
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Local news of possible interest to the medical profession, notes on removals, changes in address, birth, deaths and weddings will be gratefully received.

Advertising of articles, drugs or compounds unapproved by the Council on Pharmacy of the A. M. A., will not be accepted.

Advertising rates will be supplied on application.

It is suggested that wherever possible members of the State Association should patronize our advertisers in preference to others as a matter of fair reciprocity.

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EDITORIAL

TISSUE DIAGNOSIS IN THE OPERATING ROOM

And Immediate Cover-slip Examinations of all Fluids and Pus

(The following communication from Dr. Bloodgood is so timely and pertinent to existing conditions, which may be remedied, that its publication as an editorial seems justified—Ed).

I will consider it a courtesy if you will publish this letter in your journal, as I am anxious to come in correspondence with pathologists and surgeons interested in the immediate examination, by frozen section, of tissue in the operating room and the im-

mediate cover-slip studies of smears from all fluids and pus.

Microscopic examination of stained frozen sections has been possible for more than a quarter of a century. The staining of unfixed frozen sections with polychrome methylene blue and other stains is a well-established procedure. In many operating rooms in university and other large and small surgical clinics, provisions for these immediate diagnostic studies have not only been available, but have been in practical use for years. While, unfortunately, on the other side, this diagnostic part of the operating room is conspicuous by its absence in many clinics.

Before 1915 it was rarely necessary for a surgeon well trained in gross pathology to need a frozen section to help him in diagnosis at the operating table. Since 1915, and especially since 1922, the public has become so enlightened that malignant disease formerly easily recognized either clinically or in the gross, now appears in our operating rooms devoid of its easily recognized clinical and gross appearance and can only be properly discovered by an immediate frozen section. The majority of operating rooms are not equipped or prepared for this new diagnostic test.

The first essential part for this diagnosis is the technician — one to cut and stain the frozen section, or to make and stain the smear. The second is a pathologist trained to interpret it. It is possible for the surgeon to be all three in himself, and some young surgeons are so equipped. In others it is a dual combination—surgeon and pathologist in one, and the technician. More frequently it is three—operator, technician and pathologist. It makes little difference whether it is one, two or three individuals, providing each has the equipment and training for this most difficult diagnostic test.

In the address as chairman of the surgical section of the Southern Medical Association, I discussed biopsy, and this paper has been published in the Southern Medical Journal for January, 1927 (Vol. XX, page 18.) A reprint of this paper will be sent to anyone on request. The chief object of this letter is to come in contact with surgeons and pathologists who are sufficiently interested in this problem to discuss it either by correspondence, or by attending a meeting in the surgical pathological laboratory of the Johns Hopkins Hospital, either the Monday before, or the

Friday after the meeting of the American Medical Association in Washington.

Schools for technicians may have to be established in different sections of the country, and the surgical pathological laboratories of the medical schools and the larger surgical clinics should offer courses in this tissue diagnosis, so that surgeons may learn to become their own pathologists, or pathologists learn the particular needs of the surgeon in tissue diagnosis in the operating room.

It is quite true that when the majority of the public are fully enlightened, the surgeon will see lesions of the skin and oral cavity and the majority of subcutaneous tumors when they are so small that their complete excision is not only indicated, but possible without any mutilation. The chief danger here will be a surgical mistake—the incomplete removal of an apparently innocent tumor. There is no necessity here for biopsy. If a proper local excision is done, no matter what the microscope reveals, that local operation should be sufficient. But when lesions of the skin, oral cavity and soft parts are extensive and their complete radical removal mutilating, then there must be biopsy to establish the exact pathology.

In tumors of the breast and disease of bone, for years, the diagnosis could be made clinically, or from the gross appearances at exploration. But now, in an increasing number of cases, the breast tumor must be explored, and the gross pathology of this earlier stage is not sufficiently differentiated to allow a positive diagnosis. Immediate frozen sections are essential to indicate when the complete operation should be done. The same is true of the earlier stages of lesions of bone. The X-rays no longer make a positive differentiation between many of the benign and malignant diseases, for example, sclerosing osteomyelitis and sclerosing osteosarcoma.

We must not only specialize in tissue diagnosis, but we must organize this department so that it will function properly in as many operating rooms as possible in this country.

Then there is a final and most difficult question to consider. I doubt if it can be settled. What shall be done in those operating rooms in which there is no technician to make the sections and no one trained to interpret the microscopic picture? How can a piece be excised or a tumor removed, for example, from the breast, and this tissue sent to some labora-

tory for diagnosis without incurring the risk of the delay to the patient. I have discussed this point in my paper on biopsy.

JOSEF COLT BLOODGOOD,

Surgical Pathological Laboratory,
John Hopkins Hospital.

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Editorial Notes—Personal and General

DR. J. M. Thompson, Walters, has opened a new hospital at that place.

DR. J. P. BARTLEY, Duncan, visited Dallas and Hot Springs' clinics in March.

DR. W. C. SAIN, Ardmore, is spending several weeks in Chicago in the clinics of DeLee and Grulee.

DR. WM C. MILLER, Guthrie, who recently underwent an operation for appendicitis, made a nice recovery.

DR. JOHN O. McREYNOLDS, vice president of the American Medical Association, will be one of the guests of honor at the Muskogee meeting, May 4-6.

St. JOHNS HOSPITAL, Tulsa, entertained more than 3,000 visitors upon the occasion of the first anniversary, March 6.

MARLOW held a crippled children's clinic, March 10th. Seventy-one children were examined. The clinic was conducted by Drs. W. K. West, Oklahoma City, and A. M. McMahon, Duncan.

SHAWNEE must pay \$12,500 and costs of suit according to a decision recently rendered by jury trial, by reason of a hot water bottle burn received by a patient in the city hospital, following an operation.

DR. S. R. CUNNINGHAM, Oklahoma City, held a clinic for crippled children at Waurika in March. Dr. D. B. Collins, Waurika, was host to attending physicians who participated in the clinic.

DR. HARRY MCQUOWN

Dr. Harry McQuown, a resident of Red Rock for many years, was shot and instantly killed on the morning of March 3rd. Dr. McQuown was born at Peoria, Texas, October 30, 1874, obtaining his preliminary education at Park College. He attended the Ft. Worth University, graduating from that school's medical department in April, 1901. He practiced at Fallis, in Lincoln County, for a number of years, after which he located in Red Rock. He is survived by his wife and five children, who reside at Stillwater, where the children attended school.

DR. J. E. HARBISON, Oklahoma City, has been appointed surgeon for the Oklahoma City rail-ways.

DR. C. V. RICE, Muskogee, spent several weeks in March attending Cleveland and St. Louis Pediatric Clinics.

JACKSON COUNTY, meeting at Altus, March 29, elected president, Raymond H. Fox, Altus; E. S. Crowe, vice-president, Olustee, and Earl W. Maby, secretary-treasurer, Altus.

A TUBERCULOSIS CLINIC was held in Okmulgee County March 11th and 12th at Okmulgee. Drs. R. M. Shepard, Superintendent of Tahina, and J. O. Wails, health officer, conducted the clinic.

STEPHENS COUNTY Medical Society elected the following officers for 1927: Drs. S. H. Williamson, president; A. M. McMahon, vice-president; B. H. Burnett, secretary-treasurer; censor, J. R. Brewer; delegates, A. J. Weeden and L. M. Overton, Duncan.

DR. FRED A. GLASS has the commiseration and sympathy of every one who knows and appreciates the taste of "country smoked ham." A thief recently relieved the doctor of forty hams just as they were receiving the finishing touches of their transition to perfection.

DR. HENRY COLLINS ROGERS.

Dr. H. C. Rogers, Muskogee, for thirty years a prominent practitioner in that city, died after a short illness Monday morning, April 18. He had never been a strong man physically and died as a result of uremic poisoning. Born at Memphis, Tenn., March 10, 1867, after attending the common schools, he entered the Memphis Hospital Medical College, graduating from that school in March, 1888. He practiced until 1893 in Memphis, moving to Hot Springs, where he remained until 1896, after which he moved to Muskogee where he has been continuously at work until three days prior to his death. He is survived by his widow.

Funeral services were held at the Episcopal Church, with interment at Greenhill Cemetery. An escort of Knights Templar assisted in the last rites.

Probably no Muskogee physician had as many friends as Dr. Rogers. His life work was one of constant devotion to duty, executed at all times with unflinching courtesy and sympathy. He was connected with the Muskogee County and State Medical organizations from the time of their organization. His work was devoted to general practice and internal medicine. For many years he had been on the staff of the Midland Valley Railway. He enjoyed a large practice and leaves hundreds of friends over Eastern Oklahoma who sincerely mourn his passing. The pall bearers were all physician friends and practically every physician in Muskogee was in attendance at the funeral.

THE HOSPITAL CLINICAL CONGRESS of North America will meet in Milwaukee, June 20-24, under the auspices of the College of Hospital Administration of Marquette University. The 12th Annual Convention of the Catholic Hospital Association of the United States and Canada will be held coincident with the Clinical Congress.

UNIVERSITY HOSPITAL, Oklahoma City, according to recent ruling of Attorney General Dabney will not be required to give free services to patients sent in by counties, but the counties must pay for such services. He holds in effect that insane cases are charged to the entire state, while others are the concern of the localities sending them for treatment. He also held that cases of indigent tuberculosis in state institutions must be paid for by the state rather than the counties from which they come.

DR. JAMES ALFRED ADAMS

Dr. J. A. Adams, Alma, died at Duncan after a short illness, March 10, 1927, death being due to pneumonia. Born in Kaufman County, Texas, October 18, 1858, after attending the common schools of that county, he graduated in medicine from the University of Louisville, March 5, 1883. After practicing in Texas he located in Sulphur where he practiced for nineteen years, moving to Alma about two years ago.

DR. AMOS H. CULP

Dr. A. H. Culp, Beggs, died at his home March 19th, after a lingering illness. Dr. Culp was born at Parkersburg, Va., October 23, 1860. His preliminary education was obtained at Hooper Institute, Clarksburg Mo., after which he was graduated from Louisville Medical College February 18, 1888. He practiced in Otterville, Mo., from 1888 to 1901, when he located in Beggs. For many years he was physician to the Nuyaka Indian School and the Frisco railway at Beggs. Dr. Culp represented Okmulgee County in the legislature in 1922, and served as Senator from that District in 1924, which position he occupied until illness forced him to give up his duties. He is survived by his wife and a daughter, Mrs. Louis Steigleider of Beggs. Funeral services were conducted under auspices of the Masonic Fraternity of Okmulgee, of which order he had been a prominent member for many years. Okmulgee County and Eastern Oklahoma lose a most valuable citizen in the demise of Dr. Culp. He was a very successful practitioner, a man of large humane instincts, very liberal to those in need of his aid, a fine old citizen in every respect and above all a man whose friendship was considered an honor. In his service as legislator for several years he was always found aligned with the best interests of the people of Oklahoma.

PROGRAM

THIRTY-FIFTH ANNUAL SESSION, OKLAHOMA STATE MEDICAL ASSOCIATION, MAY 4-5-6, 1927.

Place—Masonic Temple, 6th and Boston.

Telephones—65 and 2718.

Registration—Physicians, resident of Oklahoma, must be in good standing for 1927, that is they must have issued to them certificate of membership for this year. Registration will be made from a roster of members at the Registration desks in the Exhibit Hall, which roster is made up from the 1927 remittance sheets as filed by county secretaries. Members not holding certificates of membership should at once consult their county secretaries and see that their record is cleared.

Delegates—Should present their credentials to the Credentials Committee, Masonic Building, as soon as possible after arrival, in order to facilitate the first meeting of the House of Delegates.

Papers—Are the sole property of this Association, and upon presentation should be handed to the Section Officer or to the State Secretary. If carried home for correction or alteration much unnecessary correspondence and delay is caused. They should be prepared exactly as it is desired that they appear in the *Journal*, and in the following manner: Title, author, name and address, and the date and section in which it is read. Before final publication is made printer's proof will be sent the author for correction. Papers should be clearly typewritten, double spaced, and prepared in duplicate. If any one is named to open discussion of such papers, copy or at least an abstract should be supplied the opener before the meeting.

The Council—Will meet at 11:00 A. M., May 4, Hotel Severs. All matters pertaining to the business of the Association should be presented to the Council.

The House of Delegates—Will meet in the Auditorium, Masonic Temple, at 1:00 P. M., May 4. Delegates must have their credentials in the hands of the Credentials Committee before being seated.

The General Meeting—Will be held at 8:00 P. M., May 4, Auditorium, Masonic Temple.

Scientific Sections—All Scientific Sections will meet at 3:00 P. M., May 4, and continue their deliberations until the program is completed. Papers to be read will be called in the order they appear upon the program and if passed and if not offered will drop to the bottom of the program, except the Section may vote to alter the rule. Section officers should be selected at the end of the first meeting, rather than at the end of the Section work.

Clinics—Will be held on the mornings of May 4th and 5th at the Oklahoma Baptist and U. S. Veterans' Hospital. These will begin at approximately 8:00 A. M.

Women's Auxiliary—Will meet at the Country Club, Thursday, May 5, at 10 A. M. A program, luncheon and other entertainment features are being prepared.

Golf—The Muskogee Town and Country Club Golf Course will be open to all attending physicians desiring to play.

The President's Reception and dance will be held at the Masonic Temple, Thursday, May 5, 8:30 P. M.

Phillips Petroleum Company Luncheon—Dr. O. S. Somerville, Bartlesville, Medical Director Phillips Petroleum Company, announces that he will tender the physicians of this company a luncheon at Hotel Severs, 12:30 P. M., May 5. A talk on Industrial Surgery will be the feature at the time.

Medical Reserve Officers Banquet—Will be held at Hotel Severs, 6:30 P. M., Thursday, May 5. Tickets for this function will be obtainable at the Registration desk, Masonic Temple.

Muskogee County Medical Society has named the following committees for execution of various phases of the meeting:

General Chairman—J. Hutchings White

Finance—A. L. Stocks.

Clinics—I. B. Oldham, W. P. Fite.

Exhibits, Meeting Places—C. A. Thompson.

Women's Auxiliary—Mrs. H. C. Rogers and Mrs. J. H. White.

Medical Reserve Corps Banquet—Hugh Scott, S. E. Mitchell and C. A. Thompson.

HOTEL RATES

The following rates are announced by the hotels listed:

The Severs—Without bath, single, \$1.25 to \$2.00, double, \$2.50 to \$3.50; with bath, single, \$3.00 to \$4.00; double, \$5.00 to \$6.00. Cafe in connection.

Hotel Muskogee—Without bath, single, \$1.50, double, \$2.50; with bath, single, \$2.50, double \$4.00. Cafe in connection.

Bedouin Temple, 6th and Boston—Has a limited number of rooms available for Shriners; rate, \$1.50. No dining service.

CLINICS

Clinics will be held from 8:30 A. M. to 12:00 M., May 5th and 6th, at Oklahoma Baptist Hospital, 6th and Fon du Lac, telephones 1122 and 1565; and at the United States Veterans Hospital, Honor Heights, telephone 5430, from 8:00 A. M. to 12 M.

OKLAHOMA BAPTIST HOSPITAL

Surgery:

Drs. W. P. Fite and Halsell Fite.

Drs. J. Hutchings White and R. N. Holcomb.

Drs. I. B. Oldham and I. B. Oldham, Jr.

General Medicine:

Dr. C. V. Rice, Infant Feeding.

D. C. E. White, Hygiene of the New-born.

Drs. C. N. Fullenwider and M. K. Thompson, Eye, Ear, Nose and Throat.

Dr. C. W. Heitzman, Treatment of Chronic Cholecystitis.

Dr. Fred G. Dorwart, Diabetes.

U. S. VETERANS' HOSPITAL.

The Heart—Diagnosis, X-ray and Cardiographic Work, Drs. Roy A. Wolford and Fred G. Dorwart.

Tuberculosis—Diagnosis, General Care and Treatment, Dr. Emanuel Levy.

Genito-Urinary — Cystoscopy, Syphilology, Drs. S. D. Neely and F. E. Warterfield, Muskogee, and Rex Bolend, Oklahoma City.

Dermatology—Drs. S. D. Neely and A. L. Stocks.

Surgery—(Surgical work presented will be limited to operations under local anesthesia, appendectomies, herniotomies, hemorrhoidectomies and similar cases), Drs. W. P. Fite and Claude Thompson.

Physiotherapy — The general plan and application of all Physiotherapeutic measures will be demonstrated by presentation of patients undergoing routine treatment, Dr. Robert L. Mitchell.

Eye, Ear, Nose and Throat—Thursday, 8:00 A. M. to 12 M., Dr. S. E. Mitchell.

Neuropsychiatry — Consideration of various types of cases, diagnosis, care and treatment, Dr. C. P. Murphy.

Diagnostic Measures—Special attention is invited to the various diagnostic procedures, routine and special, in use in this hospital.

Hospital Administration — All departments of the hospital will be open to visiting physicians daily from 8:00 A. M. to 12 M. Hospital superintendents are invited to inspect the dietary system and the general management of special features of the institution.

PROGRAM, GENERAL MEETING
Masonic Temple.

May 4, 8:00 P. M.

Dr. J. Hutchings White, General Chairman
Presiding

Music.

Invocation—REV. A. E. MOODY, Pastor,
First Presbyterian Church.

Address of Welcome—HONORABLE PAUL C. WILLIAMS, Mayor of Muskogee.

Response—DR. W. A. TOLLESON, Eufaula.
Music.

Presentations of DR. JOHN O. McREYNOLDS, Dallas, Vice-President, American Medical Association; DR. A. S. RISSE, Retiring President, Blackwell; DR. OLIVER O. HAMMONDS, State Commissioner of Health, Oklahoma City; DR. J. S. FULTON, President, Oklahoma State Medical Association, Atoka.

President's Address—DR. FULTON.

EYE, EAR, NOSE AND THROAT

DR. CHAS. H. HARALSON, New Wright Building, Tulsa, Chairman.

DR. FRANK R. VIEREGG, Secretary, Medical Arts Building, Oklahoma City.
Chairman's Address — DR. CHAS. H. HARALSON, Tulsa.

1. *"The Importance of Visual Field Studies in Sympathetic Ophthalmia"*—DR. A. C. MCFARLING, Shawnee.

Discussion by DR. J. R. WALKER, Enid.

2. *"Effect of Electric Flash on the Eye"*—DR. W. ALBERT COOK, Tulsa.

Discussion by DR. M. K. THOMPSON, Muskogee.

3. *"Refraction, Oculist or Optician"*—DR. A. L. NEWTON, Oklahoma City.

Discussion by DR. H. COULTER TODD, Oklahoma City.

4. *"Ocular Muscles"* — DR. C. B. BARKER, Guthrie.

Discussion by DR. H. P. PRICE, Tulsa; DR. L. M. WESTFALL, Oklahoma City, and DR. J. C. McDONALD, Oklahoma City.

5. *"Experiences With Operative Treatment of Cataracts"*—DR. HERBERT MOULTON, Fort Smith, Ark.

Discussion by DR. E. S. FERGUSON, Oklahoma City.

6. *"Vincent's Disease"* — DR. D. D. McHENRY, Oklahoma City.

Discussion by DR. J. W. BEYER, Tulsa.

7. *"External Otitis Complications"*—DR. A. M. McMAHAN, Duncan.

Discussion by DR. I. D. WALKER, Blackwell.

8. *"Pathological Anatomy of the Mastoid Antrum"*—DR. E. F. DAVIS, Oklahoma City.

Discussion by DR. O. I. GREENE, Bartlesville.

9. *"Causes and Treatment of Seasonal Hay-fever in Oklahoma"*—DR. RAY M. BALYEAT, Oklahoma City.

Discussion by DR. B. WYNDHAM, Okmulgee.

10. *"Foreign Bodies in the Air Passages"*—DR. J. C. BRASWELL, Tulsa.

Discussion by DR. W. E. DIXON, Oklahoma City.

11. *"Sarcoma of the Choroid"* (Three Melanotic Case Reports)—DR. J. F. GORRELL, Tulsa.

Discussed by DR. L. C. KUYRKENDALL, McAlester.

GENITO URINARY DISEASES, DERMATOLOGY AND RADIOLOGY

DR. FLOYD E. WARTERFIELD, Chairman, Muskogee.

DR. ELIJAH S. SULLIVAN, Secretary, Medical Arts Building, Oklahoma City.
Chairman's Address.

1. *"Cavernositis — Acute and Chronic"*—DR. FLOYD E. WARTERFIELD, Chairman.

2. *"Use of Vaccines in Urological Treatment"*—DR. MALCOLM MCKELLAR, Tulsa.

Discussion opened by DR. REX BOLEND, Oklahoma City.

3. *"The General Problem of Ureteral and Kidney Stone."*—DR. NELSE F. OKERBLAD, Kansas City.

Discussion opened by DR. W. J. WALLACE, Oklahoma City.

4. *"Bladder Conditions in Diseases of the Central Nervous System"*—DRS. W. J. WALLACE and S. F. WILDMAN, Oklahoma City.

Discussion opened by DR. FLOYD E. WARTERFIELD, Muskogee.

5. *"Cystitis"* (A report of two cases)—DR. G. E. JOHNSTON, Ardmore.

Discussion opened by DR. ELIJAH S. SULLIVAN, Oklahoma City.

6. *"Management of Acute Gonorrhea in the Male"*—DR. HENRY S. BROWNE, Tulsa.

Discussion opened by DR. MALCOLM MCKELLAR, Tulsa.

7. *"Management of Chronic Gonorrhea and Its Sequelae"*—DR. ELLIS MOORE, Oklahoma City.

Discussion opened by DR. E. L. C. COENHOUR, Tulsa.

8. *"X-Ray of the Urinary Tract"*—DR. E. C. WILSON, Oklahoma City.

Discussion opened by DR. S. E. VENABLE, Tulsa.

9. *"Pyelography"*—DR. S. D. NEELY, Muskogee.

Discussion opened by DR. J. E. HEATLY, Oklahoma City.

10. *"Case Report"*—DR. J. R. ANDERSON, Tulsa.

Discussion opened by DR. A. L. STOCKS, Muskogee.

11. "*Epithelioma of the Lip and Face*"—(Lantern Slides)—DR. C. P. BONDURANT, Oklahoma City.
Discussion opened by DR. JAMES STEPHENSON, Tulsa.

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GENERAL MEDICINE, NEUROLOGY
PATHOLOGY AND BACTERIOLOGY

- DR. LEONARD C. WILLIAMS, Chairman, Pawhuska.
DR. L. A. MITCHELL, Secretary, Stillwater.
Chairman's Address.
1. "*Uses and Abuses of Insulin*"—DR. LEA A. RIELY, Oklahoma City.
Discussion by DR. T. H. MCCARLEY, McAlester.
 2. "*Treatment of Rheumatic Fever*"—DR. C. K. LOGAN, Hominy.
Discussion by DR. W. C. MITCHENER, Okmulgee.
 3. "*Poisoning by Carbon Monoxid*"—DR. H. T. BALLANTINE, Muskogee.
Discussion by DR. T. T. SHACKELFORD, Haskell.
 4. "*Heart Disease*"—DR. FRED G. DORWART, Muskogee.
Discussion by DR. ROY A. WOLFORD, Muskogee.
 5. "*Epidemic Encephalitis*"—DR. M. S. GREGORY, Oklahoma City.
Discussion by DR. W. W. RUCKS, Oklahoma City.
 6. "*Pellagra*"—DR. F. M. ADAMS, Vinita.
Discussion by DR. E. S. LAIN, Oklahoma City.
 7. "*The Present Status of Our Knowledge Concerning the Etiology and Treatment of Pernicious Anemia*"—DR. L. D. THOMPSON, St. Louis.
 8. "*Two Cases of Streptothrix Infection in the Human*"—DR. L. A. MITCHELL, Stillwater.
Discussion by DR. LEA A. RIELY, Oklahoma City.
 9. "*The Arrhythmias, Their Cause, Import and Points on Office Diagnosis*"—DR. W. J. TRAINOR, Tulsa.
Discussion by DR. A. B. CHASE, Oklahoma City.

OBSTETRICS AND PEDIATRICS

- DR. C. V. RICE, Chairman, Muskogee.
DR. W. A. DEAN, Secretary, Tulsa.
Chairman's Address—DR. C. V. RICE, Muskogee.
- "*Diagnosis and Treatment of Asthma in Children*"—DR. RAY M. BALYEAT, Oklahoma City.
Discussion opened by DR. CARROLL M. POUNDERS, Oklahoma City.
Discussion continued by DR. K. C. REESE, Tulsa.
- "*Physiotherapy, A Neglected Aid in Obstetrics and Gynecology*"—DR. A. C. HIRSHFIELD, Oklahoma City.
Discussion opened by DR. T. H. MCCARLEY, McAlester.
Discussion continued by DR. R. H. HARPER, Afton.
- "*Infant Feeding With Acidified Milk*"—DR. WAYNE A. RUPE, St. Louis, and Extension Department of Oklahoma University.
Discussion opened by DR. K. C. REESE, Tulsa.
Discussion continued by DR. CARROLL POUNDERS, Oklahoma City.
- "*The Toxemias of Pregnancy*"—DR. T. H. MCCARLEY, McAlester.
Discussion opened by DR. W. A. DEAN, Tulsa.
Discussion continued by DR. E. EUGENE RICE, Shawnee.
- "*Pellagra in Southeastern Oklahoma*"—DR. G. E. HARRIS, Hugo.
Discussion opened by DR. RAY M. BALYEAT, Oklahoma City.
Discussion continued by DR. W. M. TAYLOR, Oklahoma City.
- "*Prevention of Birth Injuries*"—DR. E. P. ALLEN, Oklahoma City.
Discussion opened by DR. DICK LOWERY, Oklahoma City.
Discussion continued by DR. McDONALD, Tulsa.
- "*The Kidneys During Pregnancy*"—DR. E. EUGENE RICE, Shawnee.
Discussion opened by DR. WELLS, Oklahoma City.
Discussion continued by DR. OSBORN, Tulsa.

"Athrepsia and Its Treatment"—DR. K. C. REESE, Tulsa.

Discussion opened by DR. CARROLL POUNDERS, Oklahoma City.

Discussion continued by DR. SOLOMON, Oklahoma City.

"Rural Obstetrics"—DR. E. T. ROBINSON, Cleveland.

Discussion opened by DR. HARRIS, Kiowa.

Discussion continued by DR. C. W. TOWNSEND, Oklahoma City.

"Treatment of the Child Versus Treatment of the Disease"—DR. CARROLL M. POUNDERS, Oklahoma City.

Discussion opened by DR. K. C. REESE, Tulsa.

Discussion continued by DR. ARREND-DELL, Ponca City.

"Management of Labor With Occipita Posteria Position"—DR. R. H. HARPER, Afton.

Discussion opened by DR. E. P. ALLEN, Oklahoma City.

Discussion continued by DR. M. L. LEWIS, Ada.

"Preventative Medicine in Infancy and Childhood"—DR. CLARK H. HALL, Oklahoma City.

Discussion opened by DR. C. E. BRADLEY, Tulsa.

Discussion continued by DR. SOLOMON, Oklahoma City.

"Ear, Nose and Throat Problems of the Pediatrician" (With Slides)—DR. M. F. ARBUCKLE, St. Louis.

"Thymus Gland Enlargement, Clinical Manifestations With Roentgenograms"—DR. W. M. TAYLOR, Oklahoma City.

Discussion opened by DR. R. E. MYERS, Oklahoma City.

"Pyelitis In Children"—DR. M. L. LEWIS, Ada.

Pediatric Clinic.

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SECTION MEETINGS

SURGERY AND GYNECOLOGY

DR. A. W. PIGFORD, Chairman, Palace Building, Tulsa.

DR. I. N. TUCKER, Secretary, Daniel Building, Tulsa.

Chairman's Address—*"The History and Progress of Gynecology"*—DR. A. W. PIGFORD, Tulsa.

1. *"The Fibroid Uterus"*—DR. LOUIS H. RITZHAUP, Guthrie.

Discussed by DR. C. D. F. O'HERN, Tulsa.

2. *"Cervical Cancer"*—DR. W. H. LIVERMORE, Chickasha..

Discussed by DR. G. A. WALL, Tulsa.

3. *"Extra-Uterine Pregnancy"* — DR. FENTON M. SANGER, Oklahoma City.

Discussed by DR. HARRY MURDOCK, Tulsa.

4. *"The Surgical Procedure of Choice for Eradication of Gonorrhea in the Female"*—DR. F. A. HUDSON, Enid.

Discussed by DR. R. M. HOWARD and DR. WILLIAM J. WALLACE, Oklahoma City.

5. *"Oblique Inguinal Hernia, A Fundamental Principle Underlying Its Cure"*—(Lantern Slides) DR. G. A. WALL, Tulsa.

Discussed by DR. R. M. HOWARD, Oklahoma City, and DR. FRED Y. CRONK, Tulsa.

6. *"Tuberculous Peritonitis"*—DR. LEROY LONG, Oklahoma City.

Discussed by DR. McLAIN ROGERS, Clinton.

7. *"Surgery in Its Application to the Treatment of Selected Cases of Pulmonary Tuberculosis"* — DR. HORACE REED, Oklahoma City.

Discussed by DR. R. M. SHEPPARD, Tahalaina and DR. L. J. MOORMAN, Oklahoma City.

8. *"Post Operative Massive Collapse of the Lungs"*—DR. D. L. GARRETT, Tulsa.

Discussed by DR. HORACE PRICE, Tulsa.

9. *"Restoration of Ankylosed Joints"*—DR. W. H. SISLER, Tulsa.

Discussed by DR. E. D. McBRIDE, Oklahoma City.

10. *"The Broader Viewpoint of Arthritis"*—DR. WM. H. BAILEY, Oklahoma City.

Discussed by DR. W. H. SISLER, Tulsa, and DR. E. D. McBRIDE, Oklahoma City.

11. *"Repair of Injured Peripheral Nerves"*—DR. SAMUEL R. CUNNINGHAM, Oklahoma City.

Discussed by DR. W. P. FITE, Muskogee, and DR. LEROY LONG, Oklahoma City.

12. "Acute Osteomyelitis" — DR. R. V. SMITH, Tulsa.
Discussed by DR. CLARK H. HALL, Oklahoma City.
13. "Tumors of the Bone" — (Lantern Slides) DR. FRED Y. CRONK, Tulsa.
Discussed by DR. W. K. WEST, Oklahoma City.

PROGRAM OF WOMEN'S AUXILIARY

First Session Thursday, May 5, at Ten A. M., The Country Club.

DR. WINNIE SANGER, President, Presiding.

1. Song—"America." Prayer.
2. Welcome Address—Mrs. J. Hutchings White, Muskogee.
3. Response—Mrs. Edw. F. Allen, Oklahoma City (President elect).
4. Address, by State President—"Purposes of the Auxiliary."
5. Report of State Officers—Mrs. Allen; Mrs. West, Eufaula; Mrs. Scott, Shawnee; Mrs. Bailey, Sulphur; Mrs. Bobo, Treasurer, Norman.
6. Reports of County Delegates.
7. Music, Muskogee number.
8. Constitution and By-Laws read by Secretary, Mrs. H. E. Bailey.

Adjournment for lunch, and social hour, until two o'clock.

2:00 P. M.—Music, Muskogee number.

Reading.

Election of officers and delegates to the American Medical Association, Washington, D. C., May 16, 17, 18, 1927.

Report, from the Southern Medical Auxiliary, 1926 session, by Mrs. Ernest Sullivan, Oklahoma City, Treasurer of this Section.

"Inspirations From the Greater Meetings," Mrs. W. K. West, Oklahoma City.

Roll Call.

"Hygeia"—Mrs. D. Long, Duncan.
"Programs of County Auxiliaries," led by Mrs. Walter Bradford, Shawnee, and Mrs. B. A. Hayes, Oklahoma City.

Adjournment.

Additional Personal and General

(Continued from page 103)

WOOD COUNTY MEDICAL SOCIETY had as guests of honor March 9, Drs. Lea A. Riely, Oklahoma City, who talked on "Diabetis," Dr. S. N. Mayberry, Enid, whose subject was "Management of Tuberculosis in the West," and Professor L. A. Turley, Oklahoma City, Assistant Dean of the University.

CHICAGO MEDICAL SOCIETY announces Summer Clinics of two weeks duration, June 13, 24 and June 27 to July 8. All large hospitals, many special hospitals and laboratories are co-operating and announcement of schedules will soon be made. These will be sent to more than 10,000 physicians in Illinois, to whom the Clinics were originally restricted, but registration is now open to all.

AMERICAN ASSOCIATION FOR THE STUDY OF ALLERGY will hold its fifth annual meeting in Washington, Washington Hotel, May 16-17. All physicians interested in the study of allergy are invited to attend the daily sessions and be present at the dinner to be given the Association, Monday evening, May 16. Dr. Ray M. Balyeat, Oklahoma City, is on the program with a paper, "Factors Which Determine the Pollen Content of the Air."

EYE, EAR, NOSE and THROAT

Edited by Jas. C. Braswell, M. D.
726 Mayo Bldg., Tulsa

Suppuration in the Ethmoidal and Sphenoidal Sinuses: Cavernous Sinus Thrombosis: Death: Autopsy., Turner, A. L., and Reynolds, F. E., J. Laryngol. and Otol., 1926, xli, 442.

The authors report a case of cavernous sinus thrombosis, basal leptomenigitis, and subperiosteal orbital abscess. The findings made at autopsy and at microscopic examination of serial sections through the diseased area indicated that inflammation of the mucosa of the ethmoidal and sphenoidal air sinuses extended to the walls of these sinuses, inducing a chronic necrosis, and in penetrating the walls infected the red marrow. Later, it passed by way of the diploic veins to the cavernous blood sinus, giving rise to acute septic thrombosis. The septic thrombus in the blood sinus then extended along the tributary veins into the orbit, dura mater, and pia mater; and an acute purulent leptomenigitis developed.

In a review of hospital material it was found that spontaneous intracranial complications occurred in 0.6 per cent of the cases of accessory sinus disease and in 2.2 per cent of cases of aural disease. The source of the infection was the frontal sinus in 61 per cent, the sphenoid sinus in 17 per cent, the ethmoids in 14 per cent, and the maxillary sinus in 3 per cent. In descending order of frequency, the most common complications were brain abscess, acute leptomenigitis, and infective thrombosis of the cavernous blood sinus.

Iodized Oil (Lipiodol) in Otolaryngological Diagnosis—Opaque Injection Study of Thirty-five Maxillary Sinuses. Frazier, R. H., *J. Michigan State M. Soc.*, 1926, xxv, 270.

Fraser reports thirty-five cases in which a mixture of one part iodized oil and two parts of petrolatum was used in the roentgenological study of the maxillary sinuses. The sinus was punctured with a needle, all discharge present was washed out, and air was then introduced to force out all of the solution. The head was then turned so that the ostium was uppermost and enough of the oil mixture was injected to fill the cavity. When the cavity was full, resistance was felt or the pharyngoscope showed the oil coming through the ostium. With the head in the same position, lateral and postero-anterior stereograms were made.

In disease, the mucoperiosteum widens. The cavities to be considered in the diagnosis are the cavity in the bone, the cavity as filled, and the filling defect. In the cases of suppurative maxillary sinusitis which are reviewed, the mucoperiosteum thickening ranged up to II mm. When there is no tendency toward hyperplasia any plan of continuous aeration and drainage gives relief. A filling defect of 60 per cent decreases the likelihood of recovery under conservative surgical treatment. In chronic hyperplastic maxillary sinusitis the maximal uniform filling defect capable of resolution without curettage is probably under 40 per cent.

The method described may be used to determine the presence of abnormalities of the antrum or its invasion by dental cysts and other pathological processes, the type of the pathological process in acute inflammation, the type of treatment necessary, and what must be accomplished in chronic hyperplasia.

The Surgical Treatment of Acute Suppurative Paranasal Sinusitis. Shea, J. J., *J. Am., M. Ass.* 1926, lxxxvii, 162.

The author points out that the surgical treatment of acute suppurative paranasal sinusitis is of the emergency type and should be carried out with as little trauma as possible. Drainage is best obtained with rubber tubing. In children, the maxillary sinus is most frequently involved. In maxillary sinusitis, Shea obtains drainage by inserting a knife or trocar into the antrum under the inferior turbinate and as far back as possible, then enlarging a window with a rasp to accommodate a catheter, inserting the catheter into the antrum over a trocar, and using suction or irrigation.

The severe pain of an acute frontal sinusitis is due to the vacuum that is formed behind the escaping discharge. This may sometimes be overcome by alternate suction with gentle pressure or by passing a frontal sinus catheter through the frontal duct or resecting the anterior end of the middle turbinate. In cases in which rupture is feared Shea uses a Lynch radical frontal operation incision, opens the sinus with a small burr, passes a catheter into the sinus, and allows the incision to remain open. Because of the danger of osteomyelitis of the frontal bone, the anterior wall should not be attacked during the acute stage.

Sphenoiditis in children is diagnosed from headache and the X-ray findings. Shea recommends

for such cases irrigation with Dean's antral irrigating apparatus.

Acute ethmoiditis is rare in children, but when it occurs it usually ruptures into the orbit and requires external drainage. In adults the cells should be punctured and drained by suction or irrigation. The middle turbinate should not be touched. In the after-treatment, the channels should be kept open and protein silver salts employed.

This report was discussed by Lynch, Skillern, Lewis, Shambaugh, and Pratt. Most of the views expressed were not in accord with those of the author, the consensus of opinion being that operation is rarely necessary in acute sinusitis in children.

A Septum in the Nasopharyngeal Space (Le cloisonnement du cavum.) Razemon, H.: *Arch. internat. de laryngol.*, 1926, xxxii, 396.

Since 1908 the author has noted that patients operated upon for adenoids or deviations of the septum sometimes continue to complain of nasal obstruction after the operation. Careful examination in such cases has shown that the nasal septum was continued into the nasopharynx, dividing the latter more or less completely into two spaces and decreasing its capacity and the height of the choanae. The septum consists entirely of bone or of bone and a fibrous membrane.

Moire and Brindel state that occasionally the vault of the nasopharynx is not plane or slightly concave and that the space may be divided from in front backward by the vomer which forms a sort of median ridge. Comparative anatomy shows that in anthropoid apes the pharyngeal tubercle is replaced by a ridge, and in certain other species of animals a membranous septum is found in the nasopharynx.

Razemon has seen the septum described in twenty-eight patients, including adults and infants and members of both sexes. He finds that removal of the septum facilitates breathing and improves the general condition. He has operated upon twenty patients ranging in age from 9 to 33 years, and has never noted any ill effects from the operation. He performs it under local anaesthesia or ethyl chloride anaesthesia supplemented by local anaesthesia.

Brief histories of eight typical cases are reported.

ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M. D.
717 North Robinson St., Oklahoma City

Traction In Diseases and Deformities of the Joints.

J. L. Porter, *J. Bone and Joint Surg.*, 1926, viii, 753.

In the treatment of diseases and deformities of the joints, traction is indicated not only to place at rest and immobilize the affected part, but also, and chiefly, obtain muscular relaxation.

In all painful affections of the spine except carcinoma, traction on the head with the patient recumbent is the most valuable measure for the relief of pain and muscular rigidity and spasm. A very efficient halter can be made with a muslin bandage. A piece of bandage 3 inches wide

is carried around the chin and the end held above the head by an assistant. Another piece of the same length is carried around the occiput and held in the same way. The two pieces are then tied together with a short piece of bandage where they cross over the ears, and the two ends are tied together on each side to make a long loop to be hooked over the spreader from which the traction is obtained over a pulley. The amount of traction to be exerted depends upon the patient's comfort.

Traction on the leg for the relief of painful conditions about the hip is usually best obtained by Buck's extension with two adhesive strips extending up the thigh and a wooden spreader at the foot. The two traction strips should be fastened to the leg by long, narrow adhesive strips running diagonally around the leg, but not passing over the patella. In cases with flexion deformity at the hip, the angle of flexion should be accompanied by putting the leg on an inclined plane and gradually lowering the incline as the pain and spasm cease.

Traction on the knee is applied similarly to traction on the hip except that the adhesive is carried only up to the upper end of the tibia. Flexion deformity at the knee should be treated similarly to flexion deformity at the hip.

Traction is used on the arm to obtain extension or abduction or both. Traction for injuries or diseases of the shoulder is best made with the forearm semiflexed and resting on an incline. In this position it can be made in the long axis of the pulley fixed at the side of the bed. Abduction can be secured by traction with a spreader and folded towel instead of adhesive, the pulley being at the head of the bed.

Traction on the forearm for disturbances at the elbow is rarely used since in practically all diseases and injuries of the elbow except fractured olecranon treatment or immobilization can be carried out best with the arm in flexion.

Arthritis: Magnuson, P. B., J. Bone and Joint Surg., 1926, viii, 830.

The type of arthritis discussed by Magnuson is that in which the joint is stiff after prolonged rest and the stiffness and pain are relieved by movement. The patient may be in apparently the best of health but when the examination is carried far enough it may be found that there is an absence of hydrochloric acid in the stomach, indican is present in the urine, and the bowel movements are not quite normal.

One hundred representative cases were studied with regard to the uniformity of the findings. Pain was present in all of them. Most of the subjects ate meat at least once a day and some of them ate it two or three times a day. Many of them used cathartics more or less regularly. Tenderness over the joints was present in all cases, and muscle spasm in advanced cases and those in which the condition was of some standing. The pain was usually relieved by heat. There was no fever or local heat.

Thirty-five of the hundred patients had an excess of indican in the urine. Of forty-six cases in which the uric acid content of the blood was determined, an increase above 3.5 mgm. per 100 c. cm. was found in twenty-six (56 per cent). Of twenty-six cases in which an examination for urea was made, seven (34 per cent) showed an increase over what is considered a high normal

level of 23 mgm, per 100 c. cm. Of forty cases examined for non-protein nitrogen, twenty-three (57.5 per cent) showed an increase over the high normal of 35.

The treatment advocated by Magnuson is simple and effective. All red meats are eliminated from the diet. Fish and chicken are allowed. No glandular foods, nuts, beans, peas, coffee or tea are permitted. The patient is told to take at least twelve glasses of water a day at definite times. The bowels are regulated so that two normal movements occur a day. Elimination is aided by the administration of atophan or cinchophen in 5 or 7½ gr. doses three times a day.

Patients who have had chronic backache for years have entirely recovered on this treatment alone. In one case in which the condition was diagnosed as tuberculosis of the knee it cleared up in six weeks.

Magnuson is of the opinion that from 25 to 50 per cent of arthritis is due to a high protein intake and poor elimination. While it may be argued that any eliminative treatment will be beneficial, that arthritis is frequently a self-limiting disease, and that many patients get well in spite of what is done for them, the symptoms are relieved so completely and quickly following the treatment described as to compel the conclusion that there is some relation between protein intake and joint irritation and pain.

Bursitis. Cooperman, M. B.; N. York State J. M., 1926, xxvi, 807.

Cooperman described the manifestations of subdeltoid bursitis and reviews twelve cases of his own. From the pathological standpoint he distinguishes four types of the condition: (1) acute exudative bursitis, (2) subacute adhesive subdeltoid, (3) chronic peri-arthritis of the shoulder, and (4) calcific tenosynovitis of the supraspinatus and infraspinatus without symptoms.

In the treatment of subdeltoid bursitis, experience has shown that conservative measures should supersede surgical procedures. Spontaneous recovery occurs even in the calcific variety of the affection. The condition is benefited most by rest of the shoulder in the abducted position combined with diathermy.

TUBERCULOSIS

Edited by L. J. Moorman, M.D.
912 Medical Arts Bldg., Oklahoma City

THE MOST DEPENDABLE SYMPTOMS FOR MAKING A DIAGNOSIS OF EARLY CLINICAL PULMONARY TUBERCULOSIS.

F. M. POTTENGER

The American Review of Tuberculosis,
February, 1927.

A correct early diagnosis is necessary in pulmonary tuberculosis not only to give the patient the best possible chance to recover by putting him under treatment but to prevent carelessness and indiscretions on his part, due to confidence in a negative diagnosis, which may lead to serious future trouble; also to prevent unnecessary and sometimes serious disturbance of his customary routine and the incurring of unnecessary expense. Early diagnosis is extremely difficult both be-

cause the symptoms are often vague and suggestive of various other conditions and because there is no standard as to just what "constitutes sufficient evidence upon which to base a diagnosis of early clinical tuberculosis." Since individuals vary widely in their reaction to stimuli, one showing many symptoms with very little manifest disease, another few symptoms and many physical signs, each one must be considered separately as an individual.

Symptoms may be divided into three groups: (1) those due to toxemia and caused by harmful stimulation of the nervous system such as malaise, lack of endurance, loss of weight and strength, increased pulse and fever; (2) those due to reflex causes such as hoarseness, flushing of the face, lessened motion of the chest wall due to muscle spasm caused by motor reflex from the lung, and (3) symptoms due to the process itself of hemoptysis, pleurisy, sputum and frequent chest colds.

From a diagnostic standpoint hemoptysis, pleurisy, sputum and the motor reflexes from the lung are the most important. A combination of symptoms from the various groups is far more important than any one symptom by itself. Neither rales nor the X-ray can be safely relied upon to the exclusion of a careful study of the symptoms in each case.

THE ONSET OF TUBERCULOSIS IN MAN

LEON BERNARD

The American Review of Tuberculosis,
February, 1927.

The term "onset" is here taken to mean not the "so called early manifestations" in the adult which are merely an awakening of an old infection but the various phenomenon occurring at the establishment of a positive cutaneous reaction. This study of infants was made at the Laennec Hospital and Dispensary in Paris and that of older children on those protected from familial contagion and placed in healthy country homes. For the purpose of this study childhood was divided into 2 periods, the time up to three years during which the child's contacts are limited largely to the home and the period after three years when it becomes increasingly impossible to follow all contacts.

Of 124 tuberculous infants the mother was found to be tuberculous in 95 cases (the father as well in 20 cases); in 20 cases the father alone, in 3 cases more distant relatives living in the home and in 6 a servant or nurse. Thus in every case a source of infection was found. The fact that this is true with the infants of healthy mothers seems to rule out the possibility of inherited or transplacental infection. Of 30 children from 3 to 15 years old with a negative reaction which became positive while the child was under observation it was possible to trace the source of infection in 4 cases only. Of 300 children with negative reactions placed in healthy country homes, 5 developed a positive reaction after a long enough period to rule out previous family infection and in no case was it possible to definitely determine the source of contagion.

At the Laennec Hospital infants are admitted and separated at once from the tuberculous mother or father—the latter being cared for in other wards. This complete break in contact gives opportunity to study the effects of such contact

and to observe the establishment of a positive cutaneous reaction with the actual onset of disease in many cases. It was found that infection depends upon the number of bacilli thrown off by the contact patient, the intimacy and the duration of the contact (only rarely does infection take place after a brief contact or fail to occur after one of six months or more), and the age of the child—the younger the infant the shorter time and fewer bacilli required to infect it.

By separating these children from all known sources of infection it was possible to study the incubation or anti-allergic period of the disease as well as the onset or first signs of the presence of the bacilli as shown by the cutaneous reaction. The anti-allergic period varies from a few days to a few months, 3 to 5 weeks being the average time elapsing from the time of infection to the appearance of a positive skin reaction. This period is inversely proportional to the abundance of the infecting bacilli and to the severity of the infection. The shorter this period the more severe the infection—the longer the period the greater the chances of an arrestment. It ends with the appearance of a cutaneous reaction usually accompanied by a few unobtrusive symptoms; with the first appearance of a positive reaction there may be either a small loss of weight or a short period of stationary weight, a slight intestinal disturbance and a slight rise of temperature for a few days—very rarely a slight cough and in a few cases a few rales in the chest. The X-ray will occasionally give important information to one experienced in its use. These signs and symptoms are much the same regardless of the age of the child. At times the onset takes the form of an acute bronchopneumonia appearing at the same time as the positive skin reaction; this usually clears up within a month. Of course in many cases the disease is not arrested and the first attack goes on to death.

One of three things happens to these children: (1) apparent recovery from the first attack followed by repeated acute attacks, sometimes "benign", sometimes fatal; (2) complete arrestment of the first attack with an insidious process still going on in the organism and shown by very slight alterations of health; (3) complete latency of the process whose presence is shown only by a positive skin reaction.

Repeated skin tests will enable the physician to make an early diagnosis which with proper treatment and preventing further infection may change the course of the disease markedly. Prophylaxis and prevention of contact or separation after contact it has been discovered give the child its best chance in the fight against tuberculosis.

The greatest advance in the treatment of tuberculosis in recent years has been in the field of collapse therapy. This method of treatment dependent as it is on aseptic surgery and the X-ray has progressed along with surgical and roentgenological technique. It remains today the only real advance in the treatment of tuberculosis made in the past 25 years. While the best results with the rest cure are practically limited to the incipient cases, artificial pneumothorax offers great hope of cure or at least restoration to a considerable degree, to a great number of patients formerly considered hopeless. Its scope has been greatly enlarged in recent years and many cases formerly considered unsuitable are now being successfully treated by this method. In many cases suitable for collapse but in which it is prevented

by large pleural adhesions extrapleural thoracoplasty is today successfully used. Surgical collapse requires closest cooperation between the physician and the surgeon and ever more, the complete cooperation of the patient. Causing as it does a permanent collapse it can in no way take the place of artificial pneumothorax which in a large number of cases allows the diseased lung to be restored to action. Although the indications for phrenicotomy are limited to lesions in the region of the diaphragm it may be very useful in suitable cases and is also useful in combination with artificial pneumothorax and with thoracoplasty. The technique of artificial pneumothorax has improved to such a point that the dangers of gas embolism have almost disappeared—fluid exudates are no longer regarded as serious obstacles and oleo-thorax—the substituting of paraffine oil with a mild antiseptic for the purulent effusion is proving to be very valuable. Perforation of the collapsed lung can often be treated by a thoracoplastic operation if done early enough. The development of contralateral lesions remains the most frequent obstacle to successful artificial pneumothorax; combined with prolonged ber-rest, however, and with double pneumothorax in some cases, many of these patients do surprisingly well. In spite of its many advantages collapse therapy remains a mechanical treatment and is in no way a specific for tuberculosis which will not be completely conquered until some such agent is found.

Much work is being done with chemo-therapy and a great deal is expected from it. Artificial pneumothorax giving as it does opportunity to study the way tuberculosis heals will be of great use in pathological and immunological investigation.

RESULTS OF ARTIFICIAL PNEUMOTHORAX IN PULMONARY TUBERCULOSIS

Edouard Rist

American Review of Tuberculosis
March, 1927.

It is very difficult to gage the extent of benefit from artificial pneumothorax or its results both because of the difficulty in classifying the cases in order to study those of the same type and of the difficulty of obtaining a similar group of control cases. Every physician has his own method of choosing cases, however, even though he use official terms, and those cases selected by him but refusing treatment form a satisfactory control group if carefully followed up. Patients on whom artificial pneumothorax has failed because of adhesions also form a control group, although the presence of extensive adhesions may go with a tendency to marked fibrosis in the diseased lung; also these patients, having consented to pneumothorax and being disappointed by its failure are more inclined to rest and care for themselves than are those refusing treatment because of lack of intelligence or weak will and thus are not quite so available for comparison as is the refusal group.

This study was made on ward and dispensary patients from November, 1912, to January, 1926. All the cases treated are included—the results are somewhat effected by the necessary changing of interns and assistants, also by the economic condition of the patients which forced many of them back to work too early and more by the War which interrupted the study greatly.

One thousand and nine cases were treated but all the exceptional and non-tuberculous cases are left out of this study leaving 759 cases of chronic, unilateral tuberculosis treated by artificial pneumothorax. All had bacilli in the sputum and nearly all had cavities by X-ray. Of these 387 were clinically well at the close of the study—51 refills had been discontinued and 336 were still under treatment. The latter group is large because many patients, being well, prefer to keep the diseased lung collapsed, of this group all are cough and expectoration free and their occasional sputum is bacilli free; the majority work and earn their living. There are records of two cases having a relapse in the treated lung after a long interval of apparent health and of four other patients developing contra-lateral disease — 2 of whom died; the other two being still under treatment with contra-lateral collapse.

Of the 372 unsuccessful cases the condition of 33 was unchanged; 99 developed contra-lateral lesions and 240 died. The first group contains those cases which failed to derive any benefit from the treatment; some of these would be benefited by a thoracoplasty. The second group, those developing contra-lateral lesions, is constantly shifting — this condition is responsible for the most failures of artificial pneumothorax and for 75 per cent of the deaths in this series. Of this group 99 cases are still living and 179 are dead making 278 such cases. About 50 per cent of the contra-lateral lesions occur during the first six months of treatment, the more time elapsing since the beginning of treatment, the safer the contra-lateral lung. The patient developing this complication is now put on absolute rest and the treatment of the primarily affected side continued, or if this collapse has lasted long enough it is discontinued and the newly involved lung collapsed; in some cases a bilateral collapse is attempted. Such methods save many of these patients who formerly died.

Of the 94 patients (followed up) whose treatment failed because of pleural adhesions, 8 are able to work, 33 are unchanged or worse and living in institutions and 51 are dead.

Of the patients refusing treatment only 74 have kept in touch with the dispensary—of these 13 are unchanged, 22 are worse and 39 are dead.

Thus the mortality of the treated cases is 30.5 per cent compared with a mortality of 53 to 54 per cent of the untreated. While 6.5 per cent of the pneumothorax patients are healed anatomically as well as functionally, none of the untreated are in this class and we have a total of 52 per cent of the treated patients living a normal life against 0 per cent among the refusals. Of those whose adhesions made treatment impossible only 8 per cent are able to work.

Doubtless better results will be obtained with the perfecting of the technique of artificial pneumothorax and its earlier use. Development of social service with closer control of the patients will also improve results by caring for many more efficiently and preventing too early return to work.

SOME RELATIONS OF VITIATED AIR AND INADEQUATE FEEDING OF EXPERIMENTAL TUBERCULOSIS

Henry Sewall, with M. B. Lurie, Isidore Stoifer, Rose Silver and C. T. Woo

American Review of Tuberculosis
March, 1927

After an extensive study carefully controlled on numbers of guinea pigs exposed to highly vitiated air and at the same time either exposed to other animals infected with tuberculosis or themselves experimentally inoculated with the disease it was found that: in normal guinea pig acquirement of tuberculosis by contagion depends upon the duration and intensity of the exposure and that exposure of vitiated air either had no effect on their liability to contract tuberculosis or was slightly protective in comparison with the susceptibility of control animals; in guinea pigs living in vitiated air early in the course of induced tuberculosis there were more tubercles found in the lungs than in any other organs: these animals also exhibited a slightly increased resistance to later development of experimental tuberculosis in comparison with the control group living in normal air.

Another group of guinea pigs studied to discover the effect of a vitamine deficient diet showed that these animals were no more liable to contract tuberculosis by association with infected animals than were the well fed guinea pigs under similar conditions. Contagion among these animals was proportional to the intimacy and

THE USE OF VACCINES AND SERA IN COMMUNICABLE DISEASES

Clock, Ralph Oakley

Annals of Clinical Medicine, 5: 543-561
December, 1926.

The author has summarized the practical value of the sera, and vaccines as curative and therapeutic agents.

The sera are of value principally as therapeutic and curative agents. The vaccines, toxins, and toxin-antitoxins are primarily useful as protective agents. The use of these products in the different diseases follows:

Diphtheria—The universal use of diphtheria antitoxin is well known. It should be used early in the diphtheria to control the course of the disease. The universal use of diphtheria toxin-antitoxin for immunity of children of pre-school and school age is strongly recommended. It would practically eliminate the disease.

Epidemic Meningitis—The introduction of anti-meningitis serum has lowered the general mortality of epidemic meningitis to about thirty per cent. The serum should be used early in the disease, and injected directly into the spinal canal or into the ventricles of the brain in order to come in direct contact with the organisms. The spinal canal can be reached readily by puncture between the third and fourth lumbar vertebrae, and the ventricles may be readily reached through the open fontanelle in young children. The dose of serum should be as large as safe, and injected at frequent intervals, continuing the treatment until

all bacteria have disappeared in the spinal fluid, even after the patient has improved.

Measles—The use of convalescent serum may prevent measles, modify the attack, or have no effect in children that have been exposed to the disease. It has been of particular value in preventing serious epidemics of measles in institutions.

Pneumonia—The type pneumococcus serum should be used as early as possible, intravenously in doses of 100 c. c. at eight hour intervals until marked improvement in all cases of Type 1 pneumonia.

The prophylactic vaccination against pneumonia is indicated and useful for persons who are very susceptible to the disease, as indicated by repeated attacks, and for large groups of people living together under abnormal conditions, as recruits in war camps, etc.

Rabies—In known or suspected exposure to rabies, the safest procedure is to begin anti-rabic treatment at once. Do not wait for positive diagnosis in animal. The simple vaccination consists of the repeated injections of a killed virus. The killed virus has many advantages over the old Pasteur treatment. It is safer, more readily applied, and gives a better, and more rapid protection.

Scarlet Fever—Anti-toxin treatment for Scarlet fever has definitely been accepted. "The rash in scarlet fever indicates the necessity for anti-toxin treatment, while the extent of sepsis is the guide to the amount of anti-toxin needed. The smallest or basic therapeutic dose should be an amount that will neutralize 600,000 skin use doses of toxin. Treatment should cause within twelve to eighteen hours a marked subjective improvement, critical fall of temperature and pulse and fading of the rash." "The best dosage of scarlet fever toxin for immunization has not yet been definitely established." "The use of scarlet fever anti-toxin for prophylaxis is not advised except in unusual circumstances, because; (a) The immunity at best is only two or three weeks duration; (b) The incidence of infection after is only about twenty per cent; (c) Where infection is expected, the disease can be cured on the first day by anti-toxin treatment."

Smallpox—The puncture method, using glycerinated virus, is the safest and best for small pox vaccination.

Tetanus—The subcutaneous injection of 1500 units of tetanus antitoxin as a prophylactic for tetanus is safe and reliable. The antitoxin should be warmed to body temperature, injected slowly preferably in the interscapular region.

Typhoid Fever—"Vaccination against typhoid fever is now a procedure of established worth, for there is no question of its power to prevent infection. The duration of immunity is difficult to establish, but it seems to be at least two years. Much depends on the amount of exposure. The protection is not absolute, but while some cases do occur among vaccinated, the number is small." The method of vaccinating has been improved somewhat. Instead of the three standard doses, given at ten day intervals, it is better to give the standard amount of typhoid vaccine divided into five equal doses and administered at intervals of three days. A greater degree of immunity is established and the reactions are minimized or eliminated.

Pertussis—The glycerol vaccine is of value as a helpful therapeutic agent in whooping cough. It lessens the severity of the paroxysms, diminishes the vomiting and shortens the duration of the disease. The injection of serum or antitoxin may be followed by a reaction due to the protein contained in the serum and has no relation to the therapeutic value of the serum. These reactions may be of three types:

1—Serum sickness. The symptoms of serum sickness appear from eight to twelve days after the injection in about sixty per cent of the cases. The symptoms are an urticarial eruption, edema, enlarged lymph nodes, rise in temperature, and pain in the joints. The condition is annoying but not dangerous, and requires only symptomatic treatment.

2—Thermal reaction. In about 40 per cent of the cases, there may be a chill and rise in temperature immediately or within an hour after the injection. These reactions are not serious and usually require no special treatment.

3—Anaphyloctoid reactions. Fortunately these are rare. About one in every 20,000 primary injections of serum is followed within a few minutes by serious symptoms of rapid, feeble pulse and a feeling of suffocation. Asthma and hay fever patients are more apt to develop such symptoms, and care should be exercised in administering serum to such patients. The symptoms are best treated by the prompt injection of 1 c. c. of a 1:1000 solution of epinephrine hydrochloride and 1:1000 grain of atropine sulphate. The dose may be repeated if the symptoms are not relieved at once.

Second injection; about one in every 70,000 persons injected may die from shock. These occur perhaps wholly in cases of status lymphaticus, and have resulted from the first injections of serum rendering the person hypersensitive to serum. "The fear of repeating a serum injection because of having sensitized the patient is practically groundless, for there need be no fear of giving a second intramuscular or subcutaneous injection to any person who has not suffered se-

verely from the first injection." Persons that give a history of asthma, hay fever, or a previous injection of serum may be tested for hypersensitiveness by the eye test or the subcutaneous injection of a very small amount of serum. Hypersensitive persons may be desensitized or their tolerance increased by fractional administration of serum in doses of 0.1 c. c. subcutaneously increasing the dose by 0.1 c. c. every fifteen minutes.

RECENT ADVANCES IN THE TREATMENT OF PULMONARY TUBERCULOSIS

Edouard Rist

American Review of Tuberculosis
March, 1927

In the past 25 years the life work of the tuberculosis specialist has changed from a more or less helpless effort to afford his patient a painless death to a conscious and frequently successful effort to cure him. Twenty-five years ago treatment of tuberculosis was practically confined to the rest and air cure; tuberculin, initiated by Koch was being used; chemotherapy was unsuccessful and collapse therapy almost unheard of.

The rest cure was almost perfect 25 years ago and few changes have been made in it in that time. More patients are benefited by it today, however, because of improved methods of diagnosis, more complete understanding of the pathology of tuberculosis and the greater number of beds yearly available in nearly every country. It was and still is the foundation of any treatment for tuberculosis. Tuberculin treatment has not stood the test and today is scarcely ever used. In spite of much work in the field of chemotherapy no substance has been found as yet which is comparable in any way in its effect on tuberculosis to that of Salvarsan on syphilis.

REPORT OF EXAMINATION FOR LICENSES TO PRACTICE MEDICINE

OKLAHOMA STATE BOARD OF MEDICAL EXAMINERS

Examination held at State Capitol, Oklahoma City, March 8th and 9th, 1927.
The following applicants passed.

Name	Year of Birth	Place of Birth	School of Graduation	Year of Graduation	Home Address or Previous Location
Anderson, Edwin Rudolf	1899	Montevideo, Minn.	Univ. of Minn.	1926	Tulsa, Okla.
Dodd, Edward	1877	Cincinnati, Ia.	Keokuk Med. Col.	1903	Cairo, Neb.
Pite, Edward Halsell	1898	Muskogee, Okla.	Univ. of Virginia.	1924	Muskogee, Okla.
Fox, Laurence Patrick	1895	McConnellsville, O.	Virginia Univ.	1918	Tulsa, Okla.
Mills, Newton Webster	1890	Grafton, Miss.	Univ. of Tenn.	1925	Seminole, Okla.
Odell, Simeon Perry.	1857	Fordesville, Ky.	Tulana Med. Col.	1888	Ardmore, Okla.
Poynor, Erton Edwin	1881	Berryville, Ark.	Ark. Med. Col.	1904	Stilwell, Okla.
Rewerts, Fred Carl	1893	Leoti, Kan.	Kansas Univ.	1924	Bartlesville, Okla.
Showman, Winfred Aaron	1896	DeSota, Mo.	Washington Univ.	1921	Tulsa, Okla.
Sprouse, Oscar Wayne	1872	Nokomis, Ill.	Barnes Med. Col.	1903	Sulphur, Okla.
Stidham, John Henry	1877	Carrollton, Ga.	P. & S., Little Rock	1910	Shawnee, Okla.
McNitt, Harry Arnold Hull	1902	Washington, D. C.	Geo. Wash. Univ.	1925	El Reno, Okla.
Price, Chas. Thomas	1872	Springfield, Mo.	St. L. Col. P. & S.	1912	Lone Oak, Tex.
Davis, Thos. Hugh, Jr.	1899	Pomeroy, Ohio	Cincinnati Univ.	1924	Tulsa, Okla.
Lile, Luther Mace	1894	Arkansas.	Univ. of Tenn.	1916	Hope, Ark.
White, Oscar	1893	Lexington, Okla.	Northwestern Med	1924	Oklahoma City,
Miller, Oscar Hinton	1896	Wellington, Tex.	Baylor Med Col.	1920	Ada, Okla.
Fulton, Lee Williams	1882	New Berlin, Ill.	St. L. Univ. Med.	1906	Beggs, Okla.

OFFICERS OKLAHOMA STATE MEDICAL ASSOCIATION

President, 1926-27, Dr. A. S. Risser, Blackwell
 President-elect, Dr. J. S. Fulton, Atoka.
 First Vice-President, Dr. Ross D. Long, Oklahoma City.
 Second Vice-President, Dr. Fred S. Clinton, Tulsa.
 Third Vice-President, Dr. Walter A. Howard, Chelsea.
 Secretary-Treasurer-Editor, Dr. Claude A. Thompson, Barnes Bldg., Muskogee.
 Meeting Place, 1927, Muskogee.
 Delegates to the A. M. A., Dr. W. Albert Cook, Tulsa, 1927-28; Dr. Everett S. Lain, Oklahoma City, 1927-28; Dr. McLain Rogers, Clinton, 1926-27.

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Obstetrics and Pediatrics. Chairman, Dr. C. V. Rice, Barnes Bldg., Muskogee; Secretary, Dr. W. A. Dean, Masonic Temple, Tulsa.

Genito-Urinary, Dermatology and Radiology. Chairman, Dr. F. E. Watterfield, Commercial Bldg., Muskogee; Secretary, Dr. Elijah S. Sullivan, Medical Arts Bldg., Oklahoma City.

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District No. 1. Texas, Beaver, Cimarron, Harper, Ellis, Woods, Woodward, Alfalfa, Major, Grant, Garfield, Noble and Kay. Dr. S. N. Mayberry, Enid. (Term expires 1929).

District No. 2. Dewey, Roger Mills, Custer, Beekham, Washita, Greer, Kiowa, Harmon, Jackson and Tillman, Dr. Alfred A. Bungardt, Cordell. (Term expires 1929).

District No. 3. Blaine, Kingfisher, Canadian, Logan, Payne, Lincoln, Oklahoma, Cleveland, Pottawatomie, Seminole and McClain. Dr. Walter Bradford, Shawnee. (Term expires 1928).

District No. 4. Caddo, Grady, Comanche, Stephens, Jefferson, Garvin, Murray, Carter, and Love. Dr. D. Long, Duncan. (Term expires 1929).

District No. 5. Pontotoc, Coal, Johnston, Atoka, Marshal, Byran, Choctaw, Pushmataha and McCurtain. Dr. J. S. Fulton, Atoka. (Term expires 1928).

District No. 6. Okfuskee, Hughes, Pittsburg, Latimer, LeFlore, Haskell and Sequoyah. Dr. L. S. Willour, McAlester. (Term expires 1928).

District No. 7. Pawnee, Osage, Washington, Tulsa, Creek, Nowata and Rogers. Dr. Claude T. Henderson, Tulsa. (Term expires 1929).

District No. 8. Craig, Ottawa, Delaware, Mayes, Wagoner, Cherokee, Adair, Okmulgee, Muskogee, and McIntosh. Dr. J. Hutchings White, Surety Bldg., Muskogee. (Term expires 1928).

STANDING COMMITTEES

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Scientific and Educational Exhibits. Dr. S. E. Mitchell, Muskogee, Chairman; Dr. F. B. Fite, Muskogee; Dr. Fred B. Glass, Tulsa.

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Dr. H. C. Weber, Bartlesville, President; Dr. Harper Wright, Grandfield, Vice President; Dr. James M. Byrum, Shawnee, Secretary; Dr. William P. Fite, Muskogee; Dr. William T. Ray, Gould; Dr. D. W. Miller, Blackwell; Dr. L. E. Emanuel, Chickasha.

Meetings held on second Tuesday and Wednesday in January, April, July and October. Oklahoma City. Do not address communications concerning State Board examinations, reciprocity, etc., to the Journal or to Dr. C. A. Thompson, Secretary, but to Dr. J. M. Byrum, Shawnee, Secretary of the Board.

The applicant for license, either by examination or reciprocity shall be a graduate of a medical school, the requirements of which for graduation shall have been, at the time of graduation, in no particular less than those prescribed by the Association of American Medical Colleges for that particular year.

Reciprocal relations have been established with Missouri, Colorado, New Jersey, California and Louisiana, on basis of examination only, Arkansas, Georgia, Indiana, Iowa, Kansas, Kentucky, Michigan, Mississippi, Nebraska, Nevada, New Mexico, North Carolina, Ohio, Tennessee, Texas, Vermont, Virginia, Washington, Wisconsin, West Virginia, on basis of a diploma and a license without examination in case the diploma and the license were issued prior to June 12, 1908.

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Wanted—Physician wants to buy large contract mining or unopposed practice. In the states of Oklahoma or Arkansas. Will consider nothing but a first-class proposition.—H. W., care Oklahoma State Medical Jr., Muskogee, Okla.

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Additional Personal and General

DR. A. T. DODSON, Hobart, has been named health officer for Kiowa County.

DR. R. E. THACKER, Lexington, attended the meeting of the Physiotherapists in Kansas City, April 9-10.

GARVIN COUNTY MEDICAL SOCIETY, meeting March 16, at Pauls Valley, enjoyed a banquet, after which Dr. D. D. Paulus, Oklahoma City, read a paper on Diabetes.

DR. W. H. SISLER, Tulsa, announces the establishment of a hospital which will be devoted to the care and treatment of bone and joint diseases. The building will be a three-story, fire-proof structure.

STPEHENS COUNTY MEDICAL SOCIETY entertained the Dentists of the county in March. Drs. F. H. Nowlin, Oklahoma City, and P. B. Hall, Marlow, spoke on subjects of interest to physicians and dentists jointly.

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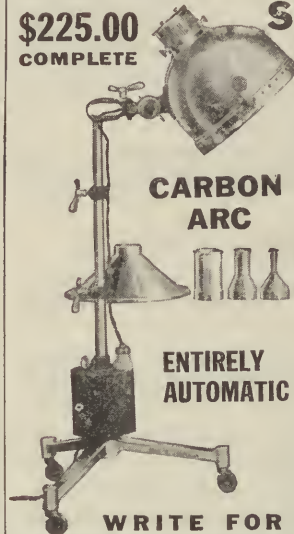
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THE JOURNAL

OF THE
OKLAHOMA STATE MEDICAL ASSOCIATION

VOLUME XX

MUSKOGEE, OKLA., MAY, 1927

NUMBER 5

PRESIDENT'S ADDRESS*

Thirty-Fifth Annual Session

J. S. FULTON, M.D.
ATOKA

Mr. Chairman, Members of the Association, Ladies and Gentlemen:

I am deeply and sincerely appreciative of the honor which you conferred upon me a year ago by electing me as your president and I am sure you will acquit me of affectation if I say, that, it is not without emotion that I have received this expression of your good will and confidence.

As I look around this room I see the faces of some who entered the medical profession with me more than thirty years ago, but I see more whose entrance into the profession I witnessed when I had myself gained some experience of it. To all of you I make my acknowledgments and pledge to you my best efforts to maintain the integrity of our association.

When one has practiced medicine for longer than a third of a century one must, if he thinks at all, form some concepts and come to some conclusions about the work of the average physician, and about the relationship that exists between the activities of the medical profession and the progress of human happiness. Within the life of a man who has practiced medicine that long there has been many changes, as well as many advancements and many discoveries.

During the last two decades medical education in this country has been revolutionized. Twenty years ago there were between one hundred and sixty and one hundred and seventy medical colleges in the United States. Now there are hardly eighty. This tremendous change has been brought about through the activities of the Council on Medical Education of the American Medical Association. As a re-

sult the medical schools we have now are much stronger schools and medical students are much better prepared.

But a very serious situation has arisen. There are many prosperous communities in this and other states without a physician. Why is this dearth of physicians in rural districts and small communities, and, is it to continue?

In former years the country doctor was looked up to as the leading citizen; he had access to every home and ministered to everybody, rich and poor alike; he made a good living, sometimes even accumulating quite a little wealth; he had all of the essential home comforts, was able to give his children a good education and managed to lay aside some money for a rainy day, and to make provision for his family after his death. His opportunities were even better than those of the city doctor, for his expenses were much lower and he had his patients so well in hand that they gave no consideration to the city doctor. His advice and counsel was the last word.

Now, the conditions of the country and city doctor have been more than reversed, and it seems to me this has been especially noticeable since the world war. As a profession none responded more nobly to their country's call, but with the knowledge and wider experience gained in this service many of them did not go back to their former locations in the small towns and rural districts where they felt they could not put into practice this same knowledge so gained, hence their gravitation to the larger centers.

The improvements in transportation too, has indeed been a great factor in bringing about an uneven competition between the city and rural doctor, much to the detriment of the latter. With our fine telephone service, improved roads, which, thus far are mostly those leading to the cities and nearby towns; the automobile and the motor bus lines, people can more readily get to the physician, or the physician to the patient, than was ever possible before. The well-to-do people in the rural

*Read before the General Session, Annual Meeting, Oklahoma State Medical Association, Muskogee, May 4, 1927.

districts have also developed the habit of going to the larger nearby towns to do their shopping and incidentally, while there, consult the city doctor. Perhaps this is the same man who was once their "country doctor", but who, upon going to the city where he has all of the advantages of hospitals and laboratories, has gained some reputation for himself, in fact, he has been talked about, and they feel sure he can do more for them than the new doctor who has just come among them. Of course this reduces the number of the country doctor's patients, and he naturally resents being called out at all times of the night, in weather both bad and good, and in emergencies, when he knows that could they have done so they probably would have gone to the nearby city to consult a doctor.

There has also been an increase in the expenses of the country doctor, for in many sections of the country, especially in the new and undeveloped parts, it is necessary for him to maintain a horse and buggy in addition to the automobile. This is *very* true in the rough and hilly country of southeastern Oklahoma.

The number of patients in the rural districts are being still further reduced by the decrease of preventive diseases, such as outbreaks of typhoid fever, diphtheria, and malaria. During the last ten years alone this decrease has amounted to about twenty per cent, all of which lessens the doctors labors and income.

A large proportion of the present day practice of the physician, perhaps a larger proportion than is necessary, is in the hospital. The doctor's time is conserved by having as many of his patients as possible come to the hospital. And, there are lots of people who would rather go to the hospital, even with the much greater expense entailed. This is often done in minor operative cases, when the local doctor could have done the work just as successfully, but however good he may be, there is this tendency to go to the hospital, hence the auto trip to town, and—the country doctor has lost a patient.

The grouping together of physicians of the city into clinics, which has become very popular and is rapidly growing more so, has not been overlooked by the patient and his or her family and they are ever ready to go through these clinics at the first suggestion of their family physician, indeed, in many instances the first information

the family doctor has, they have already gone through such clinic without his suggestion. We have no wish to discredit the splendid work of these clinics, for we believe they render the best of service to the patient, but it is a fact nevertheless, that it is taking fees from the country doctor he has been getting in the past.

In fact, the reasons for the decline of the country doctor are various and many, not the least important of which is the proper education of his children. The qualifications of the country teacher, in the past at any rate, if not at the present, are not up to the standard of those for the city, so he must reckon with the expense of sending them to distant or nearby schools. Then there is a lack of good churches, better preachers, theaters, and other means of amusement, which advantages mean so much to the ambitious boy and girl of today. They want all of these things, so the strong urge from that source again prompts them to go to the city. In brief, some of the most objectionable features of the country practice are: Loss of patients, small fees, increased expenses, long hard drives over bad roads—for as yet the cross country roads have not been much improved—hard work, poor facilities for practice; no hospitals, laboratories or libraries; few churches and poor schools; loss of time and opportunity for professional and personal development, and last, but by no means least, poor pay; yet in no community is there a greater demand for a competent and up-to-date doctor than in the rural community, and in no community are a physician's shortcomings more promptly discovered and made generally known than in the rural. He must be *everything* the word implies, and yet the above is what they have to offer such a man to stay in their midst. What wonder then that the country doctor, after struggling for years under such difficulties and against such odds, decides to cast his lot with the city doctor.

After thinking over this problem the question comes to my mind: Who will take the place of the present day country doctor after two or more decades? At first, I thought the explanation might be a scarcity of physicians, but I am told that this is not the case. This country indeed has a generous supply. In 1921, as shown by reliable statistics, there was one physician in the United States for every 720 people, which is from two to four times as many

physicians in the United States to the number of people than there are in the foreign countries. As to the distribution of physicians in the United States, a tabulation of urban and rural population, based on returns from the census bureau of 1920, shows that, of the population of the total physicians in the United States, sixty-three per cent are in cities of 5000 or more, leaving only 37 per cent in cities and towns of less than 5000. In other words, in cities of 5000 or more there is one physician to every 541 people, while in cities of less than 5000 there is one physician to every 1020 people.

I would like to give you briefly just a few statistics bearing on this phase of the situation in our own state: Ottawa County with Miami the county seat, has one physician to every 675 people. Woods County, Alva the county seat, has one physician to every 1285 people; Tulsa has a physician to every 800 people, while the county of Tulsa has one to every 950 people; Craig County, Vinita the county seat, has one physician to every 1500 people. Oklahoma County has one physician to every 850 people. Pittsburg County one physician to every 1280 people; Sequoyah County one to every 1800 people. Bryan County has a physician for every 1125 people, while the city of Durant has a physician to every 525 people. Beaver and Payne Counties have a physician to every 1350 and 1500 people; Muskogee County has one physician to every 1000 people, while Atoka County has only one physician to every 2500 people. The problem of the country doctor with respect to this therefore, is one of distribution and not of total supply.

Many of us are still unfamiliar with the tremendous improvement that has been made in medical education in the United States during the last twenty years. In 1906 the United States had more medical colleges than existed in all other countries of the world combined. Only a few of these schools, however, compared favorably with those in other countries. Entrance requirements were either very low or lacking entirely. Most of them were *unequipped*, either with laboratories, teachers, or hospitals, whereby satisfactory medical training could be provided. So large an over-supply, coupled with the seriously inadequate facilities for instruction, suggested at once that what was needed was fewer but better medical schools. During the last twenty years, as I have before stated, the number of

medical schools has been reduced from about one hundred and sixty two to eighty, mostly by the merging of from two to five medical schools in each of a score of cities, into *one*, which is in every way a better equipped and stronger institution. Entrance requirements have also been increased so that, instead of only two out of one hundred and sixty two medical schools requiring any college work for admission, now, *seventy four* out of the eighty are enforcing the higher entrance requirement.

In this connection I want to call attention to the development of medical education in our own state through the ability, initiative and untiring efforts of a member of this association, my good friend of many years, Dr. LeRoy Long.

Dr. Long became dean of the University of Oklahoma, School of Medicine, in 1915. At that time the school was a "B" grade school with an incomplete faculty working in temporary and rented quarters. It owned no property save some inadequate laboratory equipment. It had practically no hospital facilities under its control. The entire student body numbered sixty-eight. Within four years from that time, University Hospital at Oklahoma City, with two hundred beds, was built and equipped, laboratories were constructed, an additional building acquired from Oklahoma City, and the faculty strengthened. The school was advanced to "A" grade, and since then *est* medical schools in the southwest.

The recent legislature appropriated over half a million dollars for the construction and equipment of additional buildings at Oklahoma City. When these are completed the school will be united in a plant, including the hospitals, valued at well over a million dollars.

I am told that the present enrollment is one hundred and seventy-six, and that it is expected to quickly reach three hundred after the new buildings are ready for occupancy.

This is a brief recital of the growth of our school of medicine during the last twelve years. During the next twelve years I confidently expect it to become a great medical school, second to none in the entire country. This expectation is based upon an intimate acquaintance with LeRoy Long for over thirty years. I know something of his honesty, his tenacity, and his ability. I know something about the battle he has fought in the interest of me-

dical education in this state, and I call upon the membership of this association to assist him in his worthy undertaking.

It is scarcely to be expected that the young man graduating from our medical schools of today will step into the shoes of the retiring country doctor, or try to make a name for himself in the small town or rural district. The tremendous expense of a medical education, the time spent, the minimum being six years in college, this including two years in premedical collegiate work,—and the serving of at least one year in a hospital — seven years in all — makes very few of our graduates willing to go out as family doctors, and since they set out to do special work, they naturally gravitate to the larger centers.

With the realization that the practice of medicine is a very serious business, I would be afraid to advocate the shortening of the time spent in training, but I am very much of the opinion that the intelligent practice of medicine largely depends on character, and education in the fundamentals and apprenticeship. If that is the case, then I am correct in thinking that the training of physicians is being overdone, not in practical training, nor the fundamentals, but in elaboration, and I do believe that in many schools the time spent in training might be employed in a better way.

Is there a solution for the problems of a Country Doctor? I believe there is—to some extent anyway. We should have better living conditions in the small towns and outlying districts; better schools and here I want to call special attention to our consolidated schools which are doing so much toward the bringing about of the building up of community centers. Instead of having ten or twelve small school houses scattered over a good sized district, employing as many or more teachers, we have the consolidated school with its large substantial building, its corps of competent teachers, probably not excelled by the teachers in the city. Why not extend these to more districts? With the consolidated school comes the building of a community center and the building of good cross country roads, for the children must be carried to and from the school in buses, thereby necessitating the building of good roads. At this time most of our highways are maintained by the state and federal government. This leaves the road funds of the county for the development of the cross

country roads. To these schools may be added churches, modest, but provided with an able preacher, a post office, a small but well stocked store, and perhaps moving pictures two or three times a week. In such a community the country doctor can educate his children; give them some of the advantages of the small city or big town and yet let them live and grow in the glorious open country with which no city life can compare for the growing child. Such a community could hardly be anything but prosperous. Good roads and automobiles permit the country doctor thus located to run into town to attend the medical society, meet his doctor friends, and altogether have a profitable as well as a pleasant trip.

The question of securing a physician in some instances has been solved by the citizens of a community getting together and guaranteeing a certain salary. For instance, in a small town or rural district where there is a goodly number of responsible citizens, they get together and agree to pay a certain amount each, these subscriptions amounting to a guaranty of a certain sum annually, say \$2500 or \$3000, this amount being divided into monthly, quarterly or annual payments. These can be made by note or otherwise, with the understanding that each one is to pay a proportionate amount of what is lacking in the monthly, quarterly or annual income from the physicians practice. In this way all of these interested parties would naturally become patrons of the local physicians and would use their influence with their neighbors to employ the physician so retained. We believe this arrangement would not be considered unethical or objectionable by the association. Personally, I do not know whether this is a feasible solution or not. I am only offering it as one of the suggestions having been made as a solution for some of the problems of the country doctor.

I am firmly convinced though, that we are very much in need of the physician who will do something besides city practice and special practice. The requirements for practice should be modified to meet the demands of the people and the profession without impairing the efficiency of the graduate. That is my conclusion. I may be altogether wrong, but whether right or wrong, I am perfectly convinced that something must be done in the matter of medical service for the rural com-

munities—especially in the future—as well as for the ordinary people.

In conclusion, I wish to remind you of the ideals of our profession that have been bequeathed to us by those who have labored before us. Let us do our part to preserve them so that we can pass them on untarnished to those who come after us.

WHERE DO WE BELONG IN THE SCHEME OF THINGS*

LEONARD C. WILLIAMS, M.D.
PAWHUSKA.

*To the Members of the Medical Section of
the Oklahoma State Medical Association.*

Greetings:

In the opportunity afforded me as chairman of this group of our State Medical Association upon this occasion, I find a two-fold pleasure. In the first place, this is indeed a rare privilege; in the second place, I have the pleasure of rather wide latitude for expression, in as much as no definite or technical subject has been assigned. It is rather a nervous pleasure, to be sure, to be confronted with the task of launching this program which potentially holds so much of interest and worth for society at large. It fairly staggers one to assume the responsibility for picking the theme, which may best express the purpose and end of such a gathering. To be honest with you, I confess that often in the preparation of this paper I have caught myself wishing that my task were purely executive, and by the time I am through there will perhaps be a multitude of such wishes.

I am reminded in this circumstance of the youth who upon one occasion was hired by a stock man to assist in driving his cattle to market. Among the herd was a rather obstreperous animal of the male gender, which drove well enough along the country roads but began cutting capers as they neared the city. It became necessary for the owner to restrain this said animal by means of a rope in the nose ring. Arriving at the local Bank where the owner had some business to transact, he turned to the lad and asked him to hold the bull while he attended to the business. The

lad with scorn on his face and disdain in his voice, turned to him replying, "I don't mind being a director in this company, but I'll be darned if I want to be a stockholder." I am called upon not only to direct but to have a part in this concern. I'll attempt to restrain as much of the bull as possible.

Our purpose in meeting here is many fold. We have come from every part of the state to renew fellowships, to exchange experiences, think new thoughts, enlarge our scope of efficiency, and add stature to our chosen profession.

As my contribution to the aims and purposes of this convention, I would direct your thinking in lines of the relationship of the medical profession to its surroundings. I would interrogate this hearing with the query, "Where do we belong in the scheme of things," hoping that we may properly orient ourselves at all times to the niche in life that is ours, and properly make our rightful contribution to civilization. I would refer briefly to five phases of consideration possible in this theme.

First: We Belong to a Sacred Calling.

The preservation of human life is as sacred as the creation of life, and any profession which deals with such is a SACRED PROFESSION. This lifts the incentive out of the realm of material gratification into the realm of service for humanity. The profession becomes an honorable calling. Society at large looks at our task as honorable and youth looking ahead with vision of tomorrow's task, claims the profession as an honorable goal of attainment. It is so sacred that it touches the garments of the divine. It is the human instrument for the working out of eternal plans of life and life abundant. It is a function of this convention to keep the skirts of the profession clean. It is the high privilege and sacred duty of the profession to walk hand in hand with the source of life, nurture life from the cradle to the grave, and hand over to the eternities, whatever that may be, the perfect manhood, made perfect because the medical science has become acquainted with the laws of life that the human may approach the divine in its mature.

Second: We Belong to Each Other.

There is a rightful clanishness in all professions. The annual gathering in state or national groups is the result of the conception that what each has discovered in the

*Chairman's Address, read before the section on General Medicine, Urology, Pathology and Bacteriology, Thirty-fifth Annual Session, Muskogee, May 4, 5, 6, 1927.

field of experience belongs to the group. What the experienced professor in the college of medicine knows, he gladly gives to the students or to that group of Medical Sisters who have so important a part in the profession. Why? Because he feels what he has belongs to his fellows. Yet with all of this idealism there creeps in, all too frequently, the competitive feeling, and with it the professional jealousies which mar the sacredness and honor of the profession. This new day in which we live is seeing rapidly the end of such civic clubs are aiding in the breaking down of these unbrotherly relations. We belong to each other and must work together, for what is good for one is good for all. May this convention wipe out our petty jealousies and unite us in a perfect brotherhood of profession.

Third: We Belong to Our Nation.

It ought not to be necessary for the medical fraternity to be reminded of this obligation, namely, that the profession should be patriotic. No one questioned the patriotism of the medical folk during the stress of war. No one knows except those of us who were able to see, what sacrifices were made by the profession during the war. Yet, I feel we must watch our step to be in spirit and in truth as patriotic in time of peace as in time of war. During the time of peace our patriotism takes lines differing from war time loyalty. Our responsibility of citizenship is no less important than our army service. By the very sacredness of our profession we are called upon to honor and assist in the observance of law and order, and make the profession a real asset to the building of the life and ideals of the country which had made possible what we enjoy. Misuse and abuse of certain powers in the hands of the physician, and illegitimate practice surely do not belong under the title of patriotism. WE BELONG TO OUR NATION.

Fourth: We Belong to our Constituency.

In a two-fold way this is true. (1) We are indebted to our constituency for our place in life. (2) We are indebted to our constituency for our patronage. The modern processes of education are largely made possible by taxes which pay at least 50 per cent of the cost of education. The modern vision of education has made possible schools for our training. We belong to our constituency because of this. Yes I know that years of hard work and sac-

rifice were our contributions of appreciation, but appreciation must not stop there. Our profession is one that must serve to the end. What then does our constituency expect? What are their rights?

(a) That we give value received. We must be worthy of our hire.

(b) We must be willing to go more than half way in service to our constituency. Many times we know there are abuses practiced by patients, but it is ours to always give them the benefit of the doubt. Life is in our hands and life is valuable.

(c) We must keep abreast of the times. I do not mean by this we are called to practice every theory that is promoted, but we are called upon to use every tried practice for life's sake.

(d) We should make strenuous efforts to be consistent in personal life with the principles of health which we know to be proper. Of all professions this one should be clean and wholesome.

(e) The rural constituency has the right to expect that they be served by their rightful share of the profession. Finally, the constituency has the right to expect courtesy, patience, honest effort, and service. FOR WE BELONG TO OUR CONSTITUENCY.

Fifth: We Belong to the Future.

The philosophy "Lord for tomorrow and its needs I do not pray—let me live just for today" may be poetic and satisfying in a sense, but it is after all a poor philosophy for civilization. Our day in our profession is but a stepping stone for the tomorrows. Being sacred our calling is eternal. As through the long ages of the past the Universe and man has evolved from the lower to the ever increasing higher, so we must make our contribution as a step in the progress of things. As the result of our labors the generation of tomorrow in character and success, must be better than of today. It can be so only as we are constructive builders today. We are challenged to add our mite to the building of the stature and permanence of our profession. We must produce more scientific truth, we must create higher idealism, we must gain a wider social consciousness, we must put life on a higher plane. We must strive for the production of better types of human beings, and urge the construction of physical, material and social environment which will be more conducive to the building of human existence.

WE BELONG TO TOMORROW AND MUST CONTRIBUTE WITH THAT IN MIND.

Yes, we have an important niche to fill in the scheme of things. To attain our place, we must keep well in our consciousness, that our profession is a sacred calling, that we belong to ourselves, to our nation, to our constituency, and to the tomorrows. Orienting ourselves in proper relation to these is our supreme duty, and sacred privilege.

HISTORY AND PROGRESS OF GYNECOLOGY*

A. W. PIGFORD, M.D., F.A.C.S.
TULSA.

In olden days we find chapters on midwifery and gynecology included in the great compilations of medicine, of which the chief were those of the Greek, Hippocrates, dating from about the fourth century of the Christian era. Galen kept a drug shop in the Via Sacra at Rome, where he was in general medical practice. He rescued the profession of medicine from the state of chaos into which it had been plunged by the upholders of numerous sects that had sprung up—the Dogmatists, the Empyrics, the Eclectics, the Methodists and the Pneumatics. His fame was so great and after his time the progress of medicine so slow that for thirteen hundred years he was quoted by the leaders of the profession as an unassailable authority, to the retardation of research and progress. So late as the year 1559, a Dr. Geynes "was cited before the London College of Physicians for impugning the infallibility of Galen; on his acknowledgment of his error and humble recantations, signed by his own hand, he was received into the College."

By the middle of the seventh century the Roman Empire had fallen and the Arabs under Mohammed had conquered Persia and founded an empire at Bagdad, whence they extended westward. Thus it came about that the seat of culture and learning was transferred from Greece and Rome to the fanatical followers of Mohammed in Arabia, Egypt and Spain. For the next 600 years following A. D., 630, the

year in which the oldest Arabian work on medicine was published, the Arabs were the most cultured people in the world. The work they did in Medicine consisted almost wholly of translations and copyings from the Greek authors whose works had fallen into their hands. Soon after the end of the twelfth century the power of the Arabs waned; "the day - light of science went down over the nations; and an intellectual darkness, which endured for three hundred years, enveloped the general face of society."

In the Middle Ages the Renaissance of learning began in Italy and led to a renewed acquaintance with the writings of Hippocrates and Galen in their original form. In the thirteenth century Roger Bacon, born before his time, studied in the Universities of Oxford and Paris, taught natural science with the help of laboratory and observatory, and began the contest with scholasticism, holding that experiment and observation are of more importance than argument.

At the end of the fifteenth century the discovery of printing began to influence the development of medicine, and a little later the introduction of woodcuts favored progress; the latter especially, at a time when dissections of the body were rare. The great voyages of discovery which were made in these times showed the existence of many strange animals and plants unknown to the older peoples, and thus awakened a general interest in Nature study. People began to think more freely and to break away from tradition, the methods of observation and experiment were introduced, and there was a gradual development of the spirit of scepticism which is the fundamental necessity of true science.

In the sixteenth century were published fairly numerous gynecological writings in which the spirit of progress contended with tradition, with scholasticism, and even with the wildest superstition. Progress began to be made in midwifery and gynecology with the study of gynecological anatomy by Vesalius, who was the first to point out that Galen had apparently never seen a human uterus. Colombo, a pupil of Vesalius, rejected the Hippocratic theory of the turning over of the fetus at the seventh month of gestation, the culbute; and was the first to give a correct description of the attitude and position of the fetus in utero, which he described as forming an ovoid.

*Read before the Section on Surgery and Gynecology, Annual Meeting, Oklahoma State Medical Association, Muskogee, May, 1927.

In 1513 the first Midwives' text book was printed at Strasburg, "The Rose Garden," by Roesslin. This book is a compilation from old writing from the time of Hippocrates onwards, and treats only of midwifery, but treats it for the first time not as a part of surgery. The book continued to appear in many editions until the eighteenth century, and was translated into Latin, French, English and Dutch."

Since that time until the present century gynecology with other branches of medical science made very little progress. During the present century there has been more development along medical science than all other times since the time of Hippocrates. Due to the discovery of anaesthesia and asepsis modern surgery, and incidentally gynecology, has made wonderful progress. Gynecology was one of the first branches of surgery to progress owing to the accessibility and possibility of examining the female organs. The operative technique quickly converted it from a hazardous procedure to one that was comparatively safe. Then we might state that forward evolution of the science of medicine in the present century has been phenomenal. Of the many branches of modern medicine, to my mind the evolution of gynecology during the past ten years has far surpassed all other branches. One can well remember less than ten years ago first class gynecologists considered their department almost a surgical specialty. You have heard probably many times slight remarks by well known surgical men about Kelly's medical gynecology. Yet I consider him one of the greatest gynecologists who have lived during the last quarter of a century. These men considered that there was no such thing as half-way measures. All conditions had to be treated surgically. The few medical gynecologists, men who were trying to do gynecology on a conservative plane, were limited wholly to the speculum, the sound, the tenaculum and the curette, treating all conditions with swab and tampons. Such treatment was considered by the surgeons as purely revenue for the physician. It mattered not what these patients came for, whether chronic infection of the cervix or tubes, backache or misplacements, the answer was always "operate." Not that a great many cases were not operative cases, but the point is, were they properly selected, and were conservative methods used in differentiating surgical from medical cases. Moderation is the very keynote of exist-

ence. Therefore, it is *evolution* that brought the modernist to the front in gynecology, for the forward in medicine must always be a help and not eradicated. Galen, many centuries ago, said that "Nature is the healer; the physician is but her hand-maiden."

One of the most radical changes in the treatment of gynecological cases is abolishing the intra-uterine curette. Even during the last decade I have seen many times the sharp curette used in scraping and harrowing the endometrium, absolutely doing no good, but on the other hand carrying infection into the uterus and creating a very fertile soil for infection. During the last two decades many physicians used this as a cure for chronic leucorrhea, curetting the endometrium and not even touching the endocervical canal, which was the area involved, except by dilatation. Just what good that could accomplish I cannot see. Thanks to modern treatment, taught by the leading gynecologists, the curette has fallen into disrepute, serving only one purpose and that as a diagnostic aid to suspected cancer of the corpus. It never did any good, but on the other hand created more trouble and caused more deaths than all other instruments combined.

The evolution and treatment of the diseased cervix presents a remarkable change. How long has it been since the proper treatment for chronic endocervicitis was always amputation? Five or six years. It has been known for years that this was not the ideal treatment, but what else was known? Though the appearance of the cervix might be aided and the cure of an endocervicitis might be accomplished, provided all of the diseased tissue was removed, sterility might be cured, backache might be relieved; but what of the cost? When one remembers the histological structure of the muscle fibers of the uterus, bundles originating in the top-most part of the fundus, passing downward, circling around across the cervix, forming a complete iris diaphragm, instead of a definite sphincter as was once taught. When these bundles contract in the fundus they relax in the cervix. I say, knowing this structure and the physiological action of these fibers, it matters not how carefully an amputation might be done, there is bound to be trouble in subsequent labors. I do not mean to say that there should never be an amputation of the cervix. However, it should be the last resort. With

the exception of neoplasm giving trouble amputation should never be done except for diagnostic purposes, and of course in cases of chronic infection with hypertrophy, erosion, eversion and discharge, at the menopause or after. It is astonishing at the number of amputations that are done on precancerous cervixes. This is especially dangerous with men who have had very little experience. I believe it is conceded now that cancer seldom if ever has its origin in a laceration, but springs from erosions and hypertrophied cells in the canal. Certainly, amputation is not the cure for such conditions, but the cautery is. Practically all cases of endocervicitis and even small or shallow lacerations and erosions can be cured with the proper use of the electric cautery, care being taken to reach all involved mucosa and glands; yet not getting too deep to destroy the muscular tissue and getting deep enough in the lacerated areas to destroy the scar tissue, watching and treating the patient thereafter to prevent stricture. Stermdorf's operation is a more radical procedure but in the hands of well trained men in many cases produces good results, but if there should be a few infected cells left just external to the internal or a complete cure is not had, while a more conservative method can be repeated as often and as long as necessary. In my hands I have had a partial failure in two cases out of several hundred cases thus treated.

During the past five years the attitude toward the treatment of salpingitis has materially changed. It has long since been established that no surgery should be done on acutely inflamed tubes and, too, the operative results of men with a great deal of experience and even with men of less experience in chronic tubular infections have been on the whole unsatisfactory—so much so that they are looking around and investigating other treatment. It is true that the localized area may be removed, but what of the cost—sterility being produced, adhesions formed, complications arising therefrom to such an extent that even the laity is beginning to consider seriously the results before submitting to an operation. The more one becomes experienced in operative gynecology the less he operates as a cure for chronic salpingitis. The peritonitis produced becomes so localized as to cause little or no pain, except exacerbations. It is well established that pelvic infections become thoroughly localized and a remarkable

amount of immunity established if let alone. Curtis has very well established an accepted truth that one attack of acute salpingitis of gonorrheal origin has but a short period of chronicity and eventually disappears entirely, leaving normal tubes. It is the subsequent attacks that cause permanent chronicity. These subsequent attacks may follow, of course, subsequent inoculations from the male, but far more often are reinfections from the lower genital tract. Therefore, in the treatment of acute gonorrheal salpingitis the attention must be first treatment to other localities of infection, the beginning of the focus, as Bartholin's glands, Skene's ducts, urethra and cervix. One or all of these may blaze the trail. It is nearly always from these depots of infection that our recurrences take place. So we must remember that after an attack of acute salpingitis has subsided we must vigorously attack these depots of infection, exterminating all if possible. The electro-cautery in the treatment of these foci is very essential. Though careful, proper dilatation of the endocervical canal is very essential. This should be done very gently as traumatizing the tissue will cause a subsequent attack of salpingitis. Therefore, we must not only treat the condition per se, but must cope with the cause of the recurrences.

The treatment of any chronic inflammation is the same, it matters not in what part of the body it may exist. Mainly it consists of plenty of leucocytes in the right place, heat being the usual means of attraction of blood to the part. Heat in most any form is advisable. Here we may say a word regarding the vaginal douche. It has fallen in and out of repute so often that one hardly knows its status among reputable physicians. Its one use, of course, is eliminating the pus by cleansing, but its first use is the application of heat. This should be used three or four times a day in lying posture, with hips slightly elevated, with bag low so as to allow the water to run slowly, taking at least half an hour for each treatment. Not the number of gallons of water used, but the time and temperature is the thing to consider. Temperature should be from 110 to 115 degrees Fahrenheit. The greatest adjunct to the treatment of chronic salpingitis, especially of gonorrheal nature, to my mind, is the diathermy. Here this has a two-fold purpose — one, by being able to focus the heat directly in the area

of the tubes, creating a local leucocytosis, the other being able to produce enough heat in the infected area to actually destroy the gonococcus without injuring the tissues. Gonococci cannot stand heat of 110 to 113 degrees Fahrenheit. Several of these cases I have treated in this manner, at the beginning of which masses were felt on both sides, as large as one's fist, after six or eight weeks, through thin abdominal walls, being able to palpate normal size ovaries and tubes. Two of such cases have become pregnant. The electricity produced by the diathermy does not do the work, but it creates heat just the same as any other heat, but with it, with the proper sized electrodes properly placed, this heat can be directed to any focus of infection. It is not only necessary to attract blood to the part, but is always desirable to have in the blood content as many leucocytes, but unfortunately not so in chronic conditions. The best way we know to meet the difficulty is by protein-therapy. We may know little about the physiochemical operation of protein-therapy, but it is sufficient to keep in mind that the product of bacteria invasion, toxin, is antogin and protein in essence—that antogin causes the formation of anti-bodies in body fluid and that antogin is invariably colloid in nature, therefore protein in nature. The point in view from the clinician's standpoint is that in any form of protein injected it is essential that one get a positive systemic reaction in order to get results. In other words, get pre-anti-phyllaxis, producing constitutional symptoms, as fever and leucocytosis. Do not understand that I am opposed to the operative procedure. The point I am trying to make is a plea for conservative gynecological treatment. After all modern methods of treatment have been tried without avail there is nothing left other than surgery, but I do say that the adnexa is operated upon, the physiological function is interfered with and even sacrificed many, many times when conservative methods would give far better results.

How long has it been since hysterectomy was the only treatment for carcinoma of the cervix? It is true that some good surgeons are still using this method, but the more modern gynecologists have discarded surgical treatment, and have resorted entirely to radium and X-ray, reporting far better results.

Everywhere men are conservative whenever and wherever possible. Gynecologists

are finally coming into their own. The duty of the gynecologist fundamentally is to conserve the reproductive functions of the female rather than to destroy them. A gynecological specialist is not one who can remove a uterus with a beautiful technique or with great rapidity, as a general surgeon may do the same thing, but should be the balance wheel for the general surgeon, telling him when to and when not to operate. Many times the best surgery or gynecology is not to operate.

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CAVERNOSITIS—ACUTE AND CHRONIC

FLOYD E. WARTERFIELD, M.D.
MUSKOGEE

Acute Cavernositis: An infection localized in the cavernous bodies, must be differentiated from a superficial phlegmon.

Etiology: Acute cavernositis is due to injuries, extravasations of urine into the cavernous bodies, in cases of stricture and thrombosis which occur in certain blood diseases, leukemia.

Symptoms: At the onset an irregular, hard painful mass is felt which can be localized in the cavernous body. There is, at times, difficult urination, due to the abscess may break into the urethra or puration soon occurs and then a fluctuating swelling takes the place of the hard mass formerly felt. In neglected cases the abscess may break into the urethra or through the skin of the penis. As stated above, traumatism and the complications of stricture are the causes of the infection. This type of cavernositis is often spoken of as periurethral abscess. But it may be hematogenous, in origin, as it occurs in cases of septicemia.

Diffuse Cavernositis: The rarer and much severer type of cavernositis, the so-called diffuse idiopathic cavernositis, is, it is stated, always hematogenous in origin and is due to pyemic metastasis. These patients rarely recover. Diffuse cavernositis begins with marked systemic symp-

*Chairman's Address read before the Section on Genito-Urinary Diseases, Dermatology and Radiology, Thirty-fifth Annual Session, Muskogee, May 4, 5, 6, 1927.

toms: chills, high fever and marked swelling of the prepuce. Priapism is a characteristic symptom and is present by the third day of the infection. The erections may be complete or partial, may last for long periods and cause difficulty of urination. Priapism may be due to physiological irritation of the cavernous bodies or to a thrombosis of the same. The latter is painless and is generally followed by gangrene of the penis. These infections, at times, go on to abscess formation and they may rupture into the urethra. Untreated cases of a few days duration show symptoms of pyemia. Death is not uncommon. At autopsy the lungs, liver and kidneys contain abscesses. The penis may remain erect after death, held in this position by the thrombosis of the cavernous bodies. Cases which recover may have nothing of the penis left but a mass of scar tissue.

Chronic Cavernositis: Chronic cavernositis may follow upon the acute form. If the focus of infection is not entirely eradicated the condition becomes less active and assumes the chronic form. In these cases scar tissue replaces that portion of the cavernous body which was previously the site of inflammation. Another group of these chronic cases never present any acute symptoms. It is to this character of case that I especially desire to call attention. In this type of case one high authority states that "the etiology is unknown." Another equally eminent authority states with emphasis that "they are always due to a low grade infection of long standing." The inflammatory process begins as a small irregular swelling, on the dorsum of the penis and sometimes near the symphysis and sometimes near the distal end. These masses vary in size, are generally multiple. The focus of infection continuing to exist the development of connective tissue progresses until the several small masses coalesce forming a more or less continuous induration involving one or both, usually both of the bodies. In this manner more or less of the cavernous tissue of the organ upon erection causes complete impotency in most cases. Before proceeding further with the discussion of the condition, I wish to review the report in each of the four cases which have come under my observation:

Case 1. R. G., a man, age 38, married, merchant, sought relief from a condition of penis which renders coitus impossible; very much disturbed mentally.

History: Gonorrheal infection fifteen years ago; thought the disease cured in about one year; has not bothered him since in so far as he knows; general health good; present condition became noticeable about two years ago; steadily grew worse, recently becoming so marked as to render him impotent, and thus cause him to seek relief.

Examination: Healthy, well nourished man, no complaint whatever except that for which he is seeking relief.

Urinalysis: 1st, glass cloudy; 2nd glass cloudy; chemical examination; phosphates, urates, no albumen, no sugar, spg., 1016, acid. Microscopical: few pus cells, few epithelial cells, no casts, urethra about normal as to size, posterior portion very tender. Prostate: slightly larger than normal with two small areas of hardness; expressed secretion contained many pus cells; stained specimen, contained pus and what was considered staphylococci. Penis: induration beginning at or near the junction of cavernous bodies with the glans penis, area of hardness 1-2x1 inch and involving both cavernous bodies, and extending proximally in the form of a hard cord about 1-8 inch in diameter and terminating near symphysis pubis in a small dense nodule. Induration was not tender and had never had any pain except when he made effort to straighten flexed organ.

Case 2. A man, age 38, married, physician; complaint, imperfect erection with right lateral and upward curvature when organ was erected.

History: Had gonorrheal infection twenty years ago, thinks it was improperly and unskillfully treated; was a long time getting well. General health very good.

Examination: Urine, 1st glass cloudy, 2nd glass clear. Chemical: Spg. 1020, acid, no sugar, no albumen; cent, spec. 1st glass microscopically showed pus cells, and small diplococcus, no casts, no blood, urethra about normal. Prostate: somewhat larger than normal, but soft and contained no induration; expressed secretion showed many pus cells; stained specimen showed pus cells and small diplococcus. Penis: area of induration in right cavernous body near junction with glans, also involving the septum; area 1-4x1-2 inch and cord like hardness extending proximally, with several small hard processes along course to near symphysis; had been present for more than a year but gradu-

ally increasing in extent; condition at this time seriously interferes with coitus; has never had any pain, but does have discomfort if he attempts to straighten flexed organ.

Case 3. J. W., a man, age 52, married, traveling salesman.

Complaint: Unable to get an erection except at very long intervals, and then imperfectly, with upward bending of penis. Very much distressed.

History: Has never had venereal infection; general health very good; noticed sexual powers beginning to wane about two years ago; at same time noticed a small hardness on dorsum of penis near symphysis which has steadily increased in size, and six months ago noticed another lump near the distal end, and a few months ago noted that the two areas were connected by a cord-like hardness.

Examination: Healthy, robust, well nourished man, doing a man's work daily; urine, 1st glass cloudy, 2nd glass clear, chemical examination spg. 1018, acid, no albumen, no sugar, cent. specimen, 1st glass, microscope, pus cells and rod like organism, post, urethra very tender, caliber about normal. Prostate, large, soft and boggy, no nodules; expressed secretion showed pus cells, stained specimen microscopic, showed pus cells and rodlike organisms. Penis: a large area involving both bodies extending from symphysis distally 1 1-2 inch, continued by a small indurated cord to near glans junct, connecting with an area of induration $\frac{1}{4} \times \frac{1}{2}$ inch. Has never suffered any pain, only had discomfort when attempt was made to straighten flexed organ.

Case 4. C. D. K., a man, age 59, widower, insurance business.

Complaint: Insufficient and distorted erections, with inability to indulge in coitus.

History: Severely injured in street car wreck twenty years ago; has never had venereal infection; has always lived a temperate life; general health has been good until two years ago; had some rheumatic trouble, to relieve which he had all teeth removed; noticed a small hard place on upper side of penis shortly after having teeth removed; size of hardness increased, and a second hard lump was discovered near the end of the penis six month ago; has frequent imperfect erections but cur-

vature upward renders coitus an impossible feat.

Examination: General condition satisfactory; urine, 1st glass cloudy, 2nd glass clear; chemical examination spg. 1016, acid, no albumen, no sugar; cent. specimen, 1st glass microscopic shows many pus cells, and motile bacilli. Prostate: large soft, boggy, no hardness; expressed secretion, microscopic, shows many pus cells and motile bacilli; stained specimen shows pus cells and rod-like organisms. Penis: area of induration extends from symphysis distally for 1 1-2 inch, involving both cavernous bodies, continued onward by small hard cord to near the junction with the glans and blends with a second area of induration 1-2x3-4 inch; urethra has two constricted areas low in the penile portion. Post, urethra very tender. No pain except when he attempts to straighten flexed organ.

My study and observation of these cases has strongly impressed upon me the idea that the disease is secondary to and dependent upon a focus of low grade infection. All of these patients stated that they had never, so far as they knew, had any complication of prostate, bladder or urethra, and yet each of them had many pus cells and demonstrable organisms in the carefully expressed secretion. None of them complained of pain or physical discomfort, but all of them were in a state of mental distress. The inflammatory process is of such insidious nature, and the symptoms, if any at all, are so slight as to pass unnoticed by the patient, and not until he discovers the induration in the penis, and perhaps, lessening in power and duration of erections accompanied by some distortion, does he realize that he has an abnormal condition. Each of these patients enlisted my services to endeavor to relieve them of a condition that impeded their ability, in part or in whole, to perform the sexual act.

Treatment: The treatment, on the whole, is quite unsatisfactory. To accomplish anything of consequence requires a long period of time and much patience. The patient is in mental distress and usually insistent in his demands for an assurance that you can cure him. His mind must be treated as well as his body, and it will tax the ingenuity of any man to the uttermost to control these patients long enough to materially benefit them. I have directed my efforts mainly to the removal of foci of

infection, let that be in the prostate or in other localities; whatever treatment the urethra requires, and the application of heat in some form to the indurated areas. I have applied heat by means of diathermy, but it is very troublesome and time consuming; also have had the patient use two small hot water bags, one laid underneath the penis and the other on the top of the penis, and water changed as often as it became cool. Dr. Corbus of Chicago employs diathermy by means of specially made electrodes. I have not used them. If the patient will cooperate, and not be in too great haste, some beneficial results may be achieved.

OBSTRUCTION IN UPPER THIRD OF NOSE IN CHILDHOOD*

CHAS. H. HARALSON, M.D.
TULSA

Obstruction in the middle turbinal region in early childhood, is almost invariably the result of nasal accessory sinus disease, some few cases are caused by trauma and by obstruction in the fossae of Rosemuller.

The patient consults the Rhinologist for examination, after having tonsils and adenoids removed, and being treated for a considerable period of time by pediatricians, who have eliminated all possibility of disease in other parts of the body, and have tried dietary and hygienic measures with no results. The patient is of the pre-tuberculosis type, listless, undernourished, anemic, nervous and irritable; he is now back in the hands of the man who told the parents that a tonsillectomy and adenectomy would make a different individual of him. Examination of pharynx reveals either a low grade hyper-trophic pharyngitis or a pale, granular mucous membrane with a small amount of lymphoid tissue and mucous in the fossæ of Rosemuller.

Anterior rhinoscopic examination, the nasal mucous membrane is pale, secretion may or may not be present, inferior turbinates are normal in size and position, the middle turbinates are hypertrophic and project, shelf-like against the nasal septum, blocking off the upper third, or the superior meatus of the nose. This picture requires the same intensive study of the nasal accessory sinuses that persistent multiple infectious arthritis would elicit.

With the naso-pharyngoscope, if it can be used, we can sometimes determine the area from which secretion is coming; the X-ray is of value to determine size and position of sinuses, transillumination is of very little value. By shrinking the nasal mucous membrane and applying suction to the nares, some valuable information is often obtained.

The maxillary sinuses can be examined by the use of the endo-nasal puncture, following the technic of Dean. The frontal sinuses can be checked with the X-ray and transillumination fairly accurately. The sphenoidal and posterior Ethmoidal cells must be eliminated by inspection and symptoms.

The anterior ethmoids are chiefly diagnosed by inspection and elimination, remembering that the ethmoid cells are present at birth, and are of sufficient size to be of clinical importance; this is not true of the other nasal sinuses, however, we must ever keep in mind, the statement of Mosher. "Precocious development of the sinuses may make any or all sinuses of surgical size earlier in life than we expect."

The extreme difficulty in diagnosing nasal accessory sinus disease, makes it necessary to make repeated examinations in order to arrive at accurate conclusions. In my experience, ethmoid sinusitis is present in practically all of the cases of nasal accessory sinus disease in children, hence I believe that the ethmoid sinus is more frequently involved in childhood than all other nasal sinuses, therefore, when we find a nose that has a chronic nasal abnormality, with obstruction in the middle turbinal region, and a patient who has focal infection symptoms or metabolic changes of undetermined origin, I feel justified in making a diagnosis of ethmoiditis until such time as the normal air channels are reestablished or some other cause has been found.

Fortunately, in children, the nasal septum is usually straight, and the hypertrophy of the turbinates is due to a hypertrophic condition of the soft tissues, this with the assistance of the nasal mechanism which endeavors to establish breathing through normal channels, makes it possible to balance the nasal chambers without operative interferences, reestablishing normal breathing, this allows the nose to combat infection, and by the aid of shrinking, suction, and mild protective antisept-

*Chairman's address Section on Eye, Ear, Nose and Throat. Read at Muskogee, Thirty-fifth Annual Meeting, May, 4, 5, 6, 1927.

tics, the infected sinus will usually clear up.

The eradication of infection in the sinus does not mean the patient is cured, the nose must be watched closely for the next six months, any nasal irritation must be treated at once to prevent a return of the sinusitis.

The patient's general condition begins to show improvement just as soon as the nasal obstruction is removed; he responds to diet and hygienic treatment and makes an uneventful recovery.

S. H. Age 4, Girl, 3-12-22.

History: Measles at 2 years, two months later had severe cold, poor appetite, lost weight, condition did not improve. Consulted two pediatricians, tonsils and adenoids removed, five months later, some improvement for two months, then loss of appetite and energy was noted; tonics and diet had very little effect.

Referred for examination 4-5-23 patient six pounds underweight, anemic, listless and irritable; frequent colds. Pediatricians report negative, suggested focal infection, skin dry, parched and very rough.

Examination: Tonsils and adenoids removed, pharynx pale, granular and dry, no mucous. Nose: mucous membrane pale, inferior turbinates normal. Middle turbinates hypertrophied, unable to shrink them so that they did not touch septum.

By elimination of pus in middle meatus a diagnosis of ethmoid sinusitis, bilateral was made.

Nose responded to treatment, very slowly, after second month of treatment, turbinates were hanging clear of nasal septum, appetite began to improve, gained in weight rapidly. Dismissed as cured 10-8-23.

Six months later, patient was instructed to return for treatment if any evidence of obstruction was noted.

Two years later patient was an apparently normal child. Nasal spaces remained normal.

The value of making a diagnosis and of using conservative measures in treating these cases is that you reestablish nasal functions as well as the elimination of source of infection.

PROTECTING THE CHILD'S HEALTH*

C. V. RICE, M.D.

MUSKOGEE

At no time in the history of medicine has the new born been ushered into this world with a better prospect of getting through the first year of life than it has today. This has been brought about by the prenatal and post natal clinics throughout the country, also the care the mother and child are receiving by the private doctor.

It is said that one-fourth of the civilized race die during the first year. Sixty per cent of these deaths are due to nutritional disturbances and the other forty per cent to improper feeding; but at this time, I think I can truly say that these figures have been materially reduced: first, by a better understanding of the cause and prevention of rickets. This has all been brought about in the last couple of years. We are told that in some localities 100 per cent of children have rickets to some degree, and in our own community from 60 to 75 per cent. These figures show that the breast fed baby is as susceptible as the artificially fed. We are told that a child with rickets is more susceptible to all infectious diseases and particularly to the respiratory, which are responsible for 26.4 per cent of the deaths during the second year of life. This mortality can be greatly reduced: first, by the prevention of rickets, the proper ventilation of the home and sleeping room and in not taking the child of early life to public places.

Bowel conditions are still the cause of over one-fourth of deaths during the second year. This is mostly due to the variety of food the child is eating at this time, some that should not be given and some that is not properly prepared. But we can feel doubly assured that this mortality will be greatly reduced, due to the more scientific method of feeding that we now have.

The epidemic diseases are not so prevalent during the second year of life, but they have a mortality of 17.8 per cent at this age.

In the third year one-fourth of the deaths are due to epidemic diseases, with diphtheria the predominating cause.

*Chairman's Address read before the Section on Obstetrics and Pediatrics, Thirty-fifth Annual Session, Muskogee, May 4, 5, 6, 1927.

In the fifth year the death rate is on the decline, but still epidemic diseases cause about one-third of the deaths. As the child passes into the fifth year the death rate due to infectious diseases is greatly on the decline, but with the appearance of their sequelae: organic heart, acute nephritis and Bright's disease. The one outstanding cause of heart disease in children is the infections and is found in one in every fifty of our population.

What can be done in protecting the child's health?

First, by starting to build up a resistance as early as possible, by giving Cod liver oil and exposure to the direct sunlight.

Second, by feeding acid milk to all infants that need artificial feeding and can take it, and most of them can. I should say about 98 per cent.

At four months I would vaccinate all babies and at six months I would give the toxin a n t i - t o x i n . At four years the child should have the Dick test and if positive the five-dose package should be used. If a child is exposed to scarlet fever, a throat culture should be taken and a Dick given before the prophylactic dose as many of the children have an anaphylaxis for this serum, and the serum sickness seems worse than the scarlet fever. I would not give the typhoid serum to a child under six years of age unless in case of an epidemic or the hygienic conditions were bad, as in the flood district at this time. I would advise and insist that all infected tonsils be removed, regardless of age, and not wait until "the child is old enough" and some organic lesion has developed.

By carrying out these preventive plans with many others, we will not only protect the child of today but the health of the man of tomorrow.

DANGER OF INTRODUCING IODIZED OIL INTO TRACHEOBRONCHIAL SYSTEM

Edward Archibald, Montreal, and A. Lincoln Brown, San Francisco (Journal A. M. A., April 23, 1927), call attention to the possible dangers of introducing an iodized oil into the tracheobronchial system, although they are firmly convinced of its great value as a diagnostic procedure. The method is, on the whole, a safe one. But the unfavorable and even fatal complications already at hand, though few in number, are sufficient to warrant a close analysis of the various causes of possible trouble, in the hope of establishing definite contraindications to the use of the method. Experiments made by others, and their own, lead the authors to believe that no trust can be placed in any presumed antiseptic action of iodized oil;

therefore, any organisms carried down with the oil from the buccal cavity or tracheobronchial tree into the alveoli may remain an active source of infection. Moreover, it is conceivable that retained iodized oil may act as a plug and imprison organisms in the alveoli until they cause harm. Generally, a large percentage of the oil introduced is coughed up and either expectorated or swallowed. However, by one process or another, some at least is absorbed and is eliminated, mainly in the urine. The potential dangers of the administration of an iodized oil (lipiodol) into the tracheobronchial tree from the time its administration is begun until its final complete elimination from the body may be tabulated thus: I. Administration: Each method of administration has, besides its respective manipulative and technical difficulties, certain potential dangers. II. The transport of infective material from the mouth or larynx by the oil into the lung alveoli. III. Cough: The introduction of lipiodol—a foreign substance—into the tracheobronchial tree generally excites cough both at the time of its administration and after it has reached the bronchi of the second order. This cough may in turn: (a) Be the means of activating the pathologic process already present in the lungs. (b) Bring about the spread of the lipiodol carrying with it infected material into healthy alveoli, and so cause the rapid development of a bronchopneumonia. IV. Mechanical Factors: Acting as a foreign substance in the lungs. V. Drug Factor: Since it is impossible to regulate the dosage of iodine administered by the intrabronchial route, either as to amount or rapidity and duration of absorption, such a procedure is not only irrational on the basis of scientific therapeutics but: (a) Subjects the patients to the possibility of iodism. (b) In tuberculous patients may actually bring about a sensitization effect with activation of quiescent disease. (c) Allow the possibility of adding an acute process of the respiratory tract to the already present pathologic process, either from iodism or from the usual congestive action of iodine, or from the projection of infected sputum through coughing into healthy portions of the lung. Complications reported in the literature which have occurred through the intratracheal use of iodized oil have led to the formulation by various authors of general contraindications to its use. Three instances of complications occurring after the use of iodized oil, one of which ended fatally, show the potential danger of this method in cases of tuberculosis and infections of the upper respiratory tract. The conclusion is therefore reached that the introduction of iodized oil into the tracheobronchial system carries with it a certain definite degree of danger from various sources, which should be weighed before patients are subjected to its indiscriminate use.

DIABETES MELLITUS AND CONCOMITANT LEUKEMIA

In the case presented by Jerome Glaser, Chicago (Journal A. M. A., May 21, 1927), the pathologic evidence of myelogenous leukemia in the spleen and retroperitoneal lymph nodes, together with the qualitative changes in the blood picture without any marked increase in the total leukocyte count, classified the condition as myelogenous leukemia of the aleukemic type. Another unusual feature of the case was pigmentation of the skin.



J. S. FULTON, M. D.

ATOKA

PRESIDENT 1927-28

OKLAHOMA STATE MEDICAL ASSOCIATION

THE JOURNAL

OF THE

Oklahoma State Medical Association

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No. 5

DR. CLAUDE A. THOMPSON.....Editor-in-Chief
Barnes Building, Muskogee, Okla.

DR. P. P. NESBITT.....Associate Editor:
Palace Building, Tulsa, Okla.

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Reprints of original articles will be supplied at actual cost, provided request for them is attached to manuscript or made in sufficient time before publication.

Articles sent this Journal for publication and all those read at the annual meetings of the State Association are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in the Journal, the manuscript will be returned to the writer.

Failure to receive The Journal should call for immediate notification of the editor, Barnes Building, Muskogee, Oklahoma.

Local news of possible interest to the medical profession, notes on removals, changes in address, birth, deaths and weddings will be gratefully received.

Advertising of articles, drugs or compounds unapproved by the Council on Pharmacy of the A. M. A., will not be accepted.

Advertising rates will be supplied on application.

It is suggested that wherever possible members of the State Association should patronize our advertisers in preference to others as a matter of fair reciprocity.

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EDITORIAL

THE MUSKOGEE MEETING

After an absence of eight years the State Medical Association has met as the honored guest of the Muskogee medical profession. All in all the meeting was satisfactory and successful. The local profession exerted itself in the matter of providing clinics, some of which were of an unusually high order. These were also very well attended and elicited much satisfactory comment.

Of the social features the Medical Reserve dinner and the luncheon to the visit-

ing ladies were well attended. About fifty Medical Reserve officers attended their dinner while the ladies did themselves proud by entertaining about ninety. Practically all exhibit space was occupied and they were of the usual high standard heretofore maintained. The meeting was generally free from any evidences of contests which sometimes engender bitterness. The registration of physicians was 362, while 90 wives of visiting physicians were entertained. The scientific sections, as a rule, were well balanced and the program practically completed as published prior to the meeting in the April *Journal*. The very uncertain state of the weather, coupled with bad roads in every direction deterred to a large extent from the attendance the meeting should have had.

Editorial Notes—Personal and General

DR. C. A. THOMPSON, Broken Bow, has moved to Blackwell.

DR. EUGENE BAYLESS, Idabel, has moved to Brownsville, Texas.

DR. D. LONG, Duncan, has been appointed City health officer for that city.

DR. A. W. CLARKSON, Valliant, after several months' illness, has resumed his work.

TULSA was selected as the 1928 meeting place of the Association. No competitor appeared at the election.

DR. R. C. FARRIER, Idabel, has moved to Homer, La., where he will direct activities of the health unit of the county.

DR. McLAIN ROGERS, Clinton, was reelected as Delegate to the A. M. A. for the year 1928 and 1929 at the Muskogee meeting.

DR. J. D. LEONARD, Muskogee, has resigned as health officer of the county and will enter the practice of medicine at Wagoner, May 1.

MRS. G. W. WEST, Eufaula, was seriously injured by a fall while attending the meeting of the Women's Auxiliary at Muskogee, May 5.

DR. F. W. HENDERSON, Tulsa, after attending the A. M. A. meeting at Washington is attending the clinics in New York. He will do postgraduate work for several months.

DR. and MRS. HUBERT W. CALLAHAN, Tulsa, will sail June 15th from Montreal on the S. S. Montnairn. After visiting in various European countries Dr. Callahan will spend two months in the clinics of Budapest and Vienna in the study of urology. He will return in October.

DERMATOLOGY and RADIOLOGY were officially divorced from Urology and Syphilology by the House of Delegates at the Muskogee meeting. This upon motion of Dr. E. S. Lain, who voiced the views of himself and others that there was little of community interest in the alliance of such subjects, that it was cumbersome and time wasting in effect. Hereafter the dermatologists and radiologists will seek places upon the various sections more fitting to the particular subject they may wish to present.

CHIROPRACTIC AND OSTEOPATHIC treatments will not be authorized for beneficiaries of the U. S. Veteran's Bureau. General Frank T. Hines, Director of the Bureau, in explanation, states: "You will realize, that if permission is given for the employment of any one particular cult for the treatment of beneficiaries of this Bureau, all such cults will have to be considered and approval given for the treatment of any beneficiary desiring any particular line of treatment, no matter whether that treatment would be beneficial to the individual receiving the same or not. In confining its therapeutic measures to those of the regular schools of medicine, the Bureau is not inspired by prejudice to any healing cult. The Bureau feels the obligation of giving ex-service men only such medical care and treatment as had adequate trial in competent hands and represents the concensus of authoritative medical opinion. In practically all of the Bureau regional offices and in all hospitals medical care and treatment includes, apart from medical and surgical methods, such additional measures as massage, hydrotherapy, electrotherapy, etc., and is so sufficiently varied and adequate that it is not necessary to add treatments by the various cults to the remedies now afforded.

DR. NEY NEEL

Dr. Ney Neel, Mangum, died at his home December 6, 1926, after an illness of considerable duration. The cause of death was cardio-renal disease. Born in Texas, May 11, 1871, and graduating from the Ft. Worth University, he located in Mangum in 1887, which gave him the distinction of being, in point of service, the oldest practitioner of Greer County. He was several times President of Greer Society, which office he held at the time of his death. Dr. Neel specialized in general practice and was one of the State's most highly skilled anesthetists. He numbered his friends by the hundreds throughout southwestern Oklahoma. The following resolutions were passed upon his death by his county society.

RESOLUTIONS OF GREER COUNTY MEDICAL SOCIETY

WHEREAS, Death has removed from our society its president and one of its most distinguished members in the person of Dr. Ney Neel of Mangum, and

WHEREAS, His personal and professional life was always an inspiration to the other members of the society, and

WHEREAS, His high conception of his professional duty to both his patients and to his fellow practitioners was ever a source of pride to the members of this society, and

WHEREAS, Every member of the Greer County Medical Society feels a personal loss in his going, but feel that his advice and counsel, his upright, gentlemanly conduct and devotion to duty has left us a heritage which we can be proud to emulate

NOW, THEREFORE, Be it resolved that this testimonial of love and high esteem of his colleagues of the society be made a record in the minutes of the society, and that copies of this resolution be given to his family, the local press and the Journal of the Oklahoma State Medical Association.

FRANK H. MCGREGOR, M. D.,
J. B. HOLLIS, M. D.,
E. M. POER, M. D.,
Committee.

TRANSACTIONS THIRTY-FIFTH ANNUAL SESSION, OKLAHOMA STATE MEDICAL ASSOCIATION.

Muskogee, May 4, 1927

House of Delegates, Masonic Temple,
1:00 p. m.

Call to order by the President, Dr. A. S. Risser, Blackwell, who announced the previous appointment, during a Council meeting of the auditing and credentials committees as follows:

Auditing, Drs. J. H. White, Muskogee, and Walter Bradford, Shawnee.

Credentials, Drs. G. E. Johnston, Ardmore, Wm. H. Bailey, Oklahoma City, J. W. Nieweg, Duncan.

The minutes of the 1926 meeting, as published in the JOURNAL, were approved.

Report of the Secretary-Treasurer-Editor was filed, together with the approval of the Council committee on auditing.

The proposed amendment to the Constitution substituting and amending the present Constitution with reference to Medical Defense was reported upon adversely by the Council. Upon motion to adopt or reject, the proposed amendment was rejected.

Committee reports: All prepared reports submitted will appear in full in this or the succeeding issue of the JOURNAL.

Study and Control of Cancer, Dr. E. S. Lain, Chairman, made verbal report.

Medical Defense, verbal report, (see also report of Secretary-Treasurer-Editor), was made by Dr. L. S. Willour, Chairman.

Legislative, Dr. J. M. Byrum, Chairman, verbally reported to the House.

A Committee on Crippled Children was proposed, and motion adopted that such committee be appointed by the President.

Dr. C. T. Hendershot, Tulsa, moved that a vote of thanks be extended Mr. Lew Wentz, Ponca City, for his splendid and material efforts and labors on behalf of the crippled children of Oklahoma. The motion was adopted.

Dr. W. T. Tilly, Muskogee, addressed the House briefly upon Industrial relations as between beneficiary, the insurance carrier and the Industrial Commission.

The President appointed a Committee on Resolutions, the committee, Drs. J. M. Byrum, Shawnee, C. Doler, Foss and L. C. Kuyrkendall, McAlester.

The House then adjourned until 8:30 A. M., May 5, 1927.

C. A. THOMPSON,
Secretary-Treasurer-Editor.

House of Delegates, May 5, 1927.

Call to order by Dr. A. S. Risser, who introduced the incoming president, Dr. J. S. Fulton, Atoka. Dr. Risser briefly addressed the House and feelingly thanked the membership for their cooperation during the year he has served as president.

The House then proceeded with the election of officers, Dr. G. E. Johnson and Wm. H. Bailey being appointed tellers.

Drs. E. S. Ferguson, Oklahoma City, and Ellis Lamb, Clinton, were nominated for President. Dr. Ferguson receiving 16 votes, Dr. Lamb 22. Dr. Lamb was declared elected.

The result of election for vice-presidents was:

1st vice-president, Dr. W. T. Tilly, Muskogee.

2nd vice-president, Dr. C. T. Hendershot, Tulsa.

3rd vice-president, Dr. E. O. Barker, Guthrie.

Delegate to the A. M. A. for 1928-29, Dr. McLain Rogers, Clinton, to succeed himself.

Meeting place for 1928, Tulsa.

Dr. McLain Rogers, briefly addressed the House on hospitals, stressing the need for further standardization and economics.

Public Policy and Instruction of the Public. Report read by Dr. Horace Reed, Chairman, Oklahoma City.

Venereal Disease Control, verbal report by Dr. M. S. Gregory, Chairman, Oklahoma City.

Tuberculosis, verbal report made by Dr. E. E. Darnell, Clinton, member of the committee.

Contract and Industrial Practice, report read by Dr. Fred S. Clinton, Tulsa, Chairman.

Amendments to the Constitution and By-Laws, pending and proposed, then came up for discussion. A motion that all proposed amendments now pending be submitted to a committee for study, correlation and submission was lost. Considerable time was devoted to discussion of the status of the various amendments now pending, the matter being finally cleared when the House received a proposed amendment offered by Dr. C. A. Thompson, Muskogee, to adopt, with certain necessary minor changes, the proposed Constitution and By-Laws as suggested by the American Medical Association. Copies of this proposal are to be submitted to the county societies prior to the next annual session in conformity with the present Constitution and By-Laws.

Dr. E. S. Lain, Oklahoma City, moved that the words "Dermatology and Radiology", be dropped from the present Section, which will hereafter be termed "Section on Urology and Syphilology." The motion carried. Dr. W. T. Tilly offered a resolution on industrial practice, which upon motion was duly adopted. (See resolutions.)

Motion adopted to thank the citizens of Muskogee, the hospitals, country club and Masonic organization for their splendid hospitality.

The House then adjourned.

C. A. THOMPSON,
Secretary-Treasurer-Editor.

THE COUNCIL

Muskogee, May 4, 1927—11:00 A. M.

Call to order by the President, Dr. A. S. Risser.

Present, Dr. A. S. Risser, President; Dr. J. S. Fulton, J. H. White, L. S. Willour, C. T. Hendershot, Walter Bradford, A. H. Bungardt, councilors, and C. A. Thompson, Secretary-Treasurer-Editor.

An auditing committee composed of Drs. J. H. White and Walter Bradford, with the auditor, Hugh Lewis, reported that they had examined the books, bank balances and all other papers connected with the financial affairs of the Association and found them correct. (See report of Secre-

tary-Treasurer-Editor). The report was approved.

The Council unanimously advised with reference to the proposed amendment to the Constitution and By-Laws affecting Medical Defense, that the same be disapproved and not passed. Motion to that effect adopted.

A Resolutions Committee was appointed composed of Drs. J. M. Byrum, Shawnee, C. Doler, Foss and L. C. Kuyrkendall, McAlester.

Appeal of Dr. L. H. Henly from the action of Rogers County Medical Society was received. No action taken thereon as officers of Rogers County were not present.

The Council then adjourned.

C. A. THOMPSON,
Secretary-Treasurer-Editor.

THE COUNCIL

May 5, 1927—2:00 P. M.

Present, Drs. J. S. Fulton, President; D. Long, C. T. Hendershot, A. H. Bungardt, Walter Bradford, L. S. Willour, Councilors and C. A. Thompson, Secretary-Treasurer-Editor.

Call to order by the President, Dr. J. S. Fulton.

The case of Henly vs. Rogers County Medical Society was then considered. Statements were heard from Drs. Mills, Meloy, Walter Howard and J. M. Byrum. It was the decision of the Council that: "It is questionable whether the trial of Dr. Henly was regular (2) and if it was regular the penalty of expulsion was too severe. The matter is referred to the Councilor, Dr. C. T. Hendershot for adjustment, if possible, and in case of his failure, a new investigation is ordered by a subcommittee of the Council." Motion to this effect was adopted.

The Council then adjourned.

C. A. THOMPSON,
Secretary-Treasurer-Editor.

THE GENERAL MEETING

Was held in the Masonic Temple, May 4th at 8:00 P. M., Dr. J. H. White, Muskogee, General Chairman, presiding. Invocation by Reverend A. E. Moody, Muskogee, pastor First Presbyterian Church. Address of welcome, Honorable Paul C. Williams, Mayor of Muskogee, response by Dr. W. A. Tolleson, Eufaula.

Dr. A. S. Risser, Blackwell, retiring

President was introduced and made a brief statement of his work.

Dr. O. O. Hammonds, State Commissioner of Health was introduced and spoke briefly to the meeting, after which Dr. J. S. Fulton, president-elect delivered his address.

Dr. A. L. Blesh, Oklahoma City, made a plea to the profession for support for the Gorgas Memorial.

The program was varied by several musical selections from Muskogee talent.

OKLAHOMA STATE MEDICAL ASSOCIATION

Annual Report of the Secretary-Treasurer-Editor. Thirty-fifth Annual Session, Muskogee, May 4, 5, 6, 1927

April 30, 1927.

To the Council, House of Delegates and Members of the Oklahoma State Medical Association:

Gentlemen:—

In conformity with the Constitution and By-Laws I submit herewith condensed statement of transactions of my office from May 1, 1926 to April 30, 1927, inclusive.

Detailed statements, containing items of receipt and disbursement, cash books, accounts, duplicate deposit slips, with certificates from officers of the Commercial National Bank, Muskogee, as customary, have been submitted to the Council and referred to their auditing committee for report. All such items have been certified by the accountant, Hugh A. Lewis, of said bank.

Membership:

On April 30, 1926, we had 1575 members; on April 30, 1927, we had 1560.

Deaths in Our Membership:

Since last year's report we have had to record the passing from our midst by death, the following members:

Dr. A. Ralph Mavity, Marlow.
Dr. Charles L. Reeder, Tulsa.
Dr. Austin I. Brown, Oklahoma City.
Dr. Robert A. Munn, McAlester.
Dr. Eben N. Allen, McAlester.
Dr. William S. Woodford, Douthat.
Dr. Arthur A. Will, Oklahoma City.
Dr. George W. Jobe, Wagoner.
Dr. Fred F. Fulton, Oklahoma City.
Dr. J. A. Adams, Alma.

Dr. John E. Lee, Haskell.
 Dr. W. E. Berninger, Allen.
 Dr. Ney Neel, Mangum.
 Dr. D. B. Woodson, Poteau.
 Dr. W. B. Bentley, Calvin.
 Dr. G. R. Gordon, Wagoner.
 Dr. John E. Bailey, Sulphur.
 Dr. Amos H. Culp, Beggs.
 Dr. Harry McQuown, Red Rock.
 Dr. Henry C. Rogers, Muskogee.
 Dr. Ira E. Smith, Commerce.

Medical Defense:

Our attorney submits the following as the status of cases in his charge in the past year:

Tulsa County No. 32250—Dismissed upon motion of defendant.

Tulsa County No. 24172—Dismissed upon demurrer to the plaintiff's petition.

Murray County No. 3072—Not participated in inasmuch as defendant was sufficiently defended by insurance.

Oklahoma County No. 47875—Demurrer to plaintiff's petition pending.

Wagoner County No. 5943—Settled upon defendant's suggestion for \$200.00.

Lincoln County No. 8136—Pending.

Oklahoma County No. 45152—Dismissed upon defendant's demurrer.

Kay County No. 10806—Pending.

Muskogee County No. 16763—Verdict for defendant.

In addition to the above, a number of members have applications pending for defense, and should such cases reach trial status, they will be entitled to attorney fees to the extent of \$100.00.

The Journal and Advertising:

As we have pointed out before, a vital necessity to continued prosperity and growth of the JOURNAL lies in the attitude and quality of support given worthy advertisers of high grade products and pharmaceuticals, by our members. It is again urged that whenever the products of our advertisers are equal or superior to that of the non-advertisers, that the advertiser be given preference in every instance. Advertising is slowly improving as to permanence and volume, thus securing for us a fairly definite income from that source, which should be fostered and encouraged by every proper means.

Finances:

Our business and balances are in a healthier state than ever before in our his-

tory. They can be maintained at this state and slowly increased by maintaining conservative treatment. The various balances and resources, exclusive of open advertising accounts, are as follows:

FINANCIAL STATEMENT

Oklahoma State Medical Association

Dr. C. A. Thompson

Secretary-Treasurer-Editor

May 1 1927

Receipts

May 1, 1926, Balance on hand in bank	\$ 3,734.78
Advertising and Subscriptions	6,881.55
County Secretaries	6,595.00
Interest on Liberty Bond	21.26
Check No. 1458, July 12, 1923, issued to Dr. Tom Lowry, not used	6.00
Total	\$ 17,238.59

Expenditures

Printing, JOURNAL	\$5,803.80	
Miscellaneous	202.69	6,006.49
Office rent		390.00
Office Supplies and expense		143.92
Telephone telegraph and drayage		44.93
Stamps and postage		272.31
Press clippings and subscriptions		73.00
Refunds		61.50
Treasurer's bond and audit of books		45.00
Expense Oklahoma City meeting, 1926		283.79
Legislative and Delegates expense		548.25
Checks Deposited in bank and returned not paid		40.00
Transfer to Medical Defense fund		300.00
Transfer to Time Deposit (C. D.)		
Commercial National Bank Muskogee Oklahoma		1,500.00
Salary to L. A. Smith, Business Mgr. to January 1, 1927		1,292.50
Salary Mrs. Oltha Shelton		310.00
Balance Salary, Secretary, April 1926		96.79
Secretary Salary		2,220.45

Total	\$ 13,628.93
May 1, 1927, Balance cash on hand	3,609.66
Total	\$ 17,238.59
May 1, 1927, Balance Cash on hand in bank	\$ 3,609.66
Checks Nos. 2532, 2533, outstanding	513.15
Total	\$ 4,122.81
May 1, 1927, Balance Cash on hand in bank	\$ 3,609.66
Time Deposit, Commercial National Bank	1,500.00
Liberty Bond	500.00
Total Cash Assets, May 1, 1927	\$ 5,609.66

FINANCIAL STATEMENT

MEDICAL DEFENSE FUND
OKLAHOMA STATE MEDICAL
ASSOCIATIONDr. C. A. Thompson
Secretary-Treasurer-Editor
May 1, 1927

Receipts

May 1, 1926, Balance Cash on hand	\$ 119 28
March 8, 1927, Oklahoma State Medical Association	300.00
March 19, 1927, Interest on Time Deposit	120.00
Total	\$ 939.28

Expenditures

Attorney's Fees and Legal Expense	\$ 706.55
May 1, 1927, Balance on hand in bank	232.73
Total	\$ 939.28
May 1, 1927, Cash in bank	\$ 232.73
Time Deposit, Commercial Natl. Bank	3,000.00
May 1, 1927, Total Cash Assets	\$ 3,232.73

Total Cash Assets, Oklahoma State Medical Association	\$ 5,609.66
Medical Defense Fund	3,232.73

May 1, 1927, Grand Total, Cash Assets \$ 8,842.39

Respectfully submitted,
C. A. THOMPSON
Secretary-Treasurer-Editor.Signed:
Hugh A. Lewis,
Auditor.

COMMERCIAL NATIONAL BANK

Muskogee, Oklahoma

May 2, 1927

TO WHOM IT MAY CONCERN:

This is to certify that there was to the credit of the Oklahoma State Medical Association on checking account with this bank, at the close of business April 30, 1927, according to our records, the sum of \$4,122.81; and on time deposit the sum of \$1,500.00, evidenced by certificate of deposit No. 17386, dated March 19, 1927.

This bank was holding for said Association on that date, for safe-keeping, one \$500.00, Second Converted 4 1-4 per cent Liberty Loan Bond.

Yours very truly,
(Signed) E. D. SWEENEY,
Vice-President.

TO WHOM IT MAY CONCERN:

This is to certify that there was to the credit of the Medical Defense Fund on checking account with this bank at the close of business April 30, 1927, according to our records, the sum of \$232.73; and on time deposit the sum of \$3,000.00; evidenced by two certificates of deposit as follows:

No. 17384 dated March 19, 1927, \$1,000.00
No. 17385 dated March 9, 1927, 2,000.00

Yours very truly,
(Signed) E. D. SWEENEY,
Vice-President.

RESOLUTIONS

RESOLUTION ON INDUSTRIAL RELATIONS
WHEREAS:

Since the adoption of the Oklahoma State Compensation act there is growing up (in industrial centers) a destructive ethical tendency in regards the employment of physicians to injured employees and,

WHEREAS:

The compensation act does not deprive the workmen of their right to employ the physician of their choice and therefore,

BE IT RESOLVED:

That it shall be considered unethical for a member of this Association to have displayed in any industrial establishment a placard setting forth that he has the exclusive right to administer professional service to those injured in the industry or to represent in anyway that failure to conform to this on the part of the injured would deprive him of such compensation to which he is entitled under the law and be it further Resolved:

That this Association while recognizing the right of insurance Companies to employ physicians to conserve their interests, yet these physicians are required to conform to the established rules of ethical conduct, and must not use deception and fraud in their endeavor to serve these companies.

BE IT FURTHER RESOLVED:

That a committee of five be appointed by the President to meet with representatives of insurance, companies, the Industrial Commission and Labor Unions, to the end that industrial practice under the compensation Act may be brought into conformity with the ethics of our Association which are essential to the best interests of all concerned.

W. T. TILLY.

(Adopted)

C. A. THOMPSON, Secretary.

REPORT OF COMMITTEE ON HEALTH
PROBLEMS IN PUBLIC EDUCATION

The committee on Health Problems in Public Education submits the following report:

A joint committee on Health Education has been created which was an outgrowth of the public health section of the State Education As-

sociation of 1926, this committee being composed of representatives from the State Department of Health, State Department of Public Instruction, all teacher colleges, Extension Departments of Oklahoma University and the A. & M. College and the Oklahoma Public Health Association. This Joint Committee has arranged a comprehensive plan for school health work that includes:

- (a) A course for teacher training classes.
- (b) Demonstrations for class room health activities to be given.
 1. To teachers and pupils in the schools.
 2. At teachers' meetings.
 3. In teacher colleges.
- (c) Working on plans for courses of study for patrons clubs.
- (d) Working for closer cooperation and coordination of all school health work in the state.

We believe that physical training of school children should include all children with the particular kind adaptable for all groups and deplore the fact that too much attention is devoted to the physically superior pupils. We believe the medical profession should keep these facts before the public to the end that our 30 per cent malnourished and underdeveloped children be made normal.

We believe the medical profession should support all measures calculated to prevent communicable disease in public schools and especially support organized efforts for eradicating certain specific preventable diseases from the community such as diphtheria, typhoid, scarlet fever and small-pox.

We believe the medical profession should encourage the teachers of our state in their attempts to better the physical condition of their pupils through teaching correct health habits, through observation of their physically defective children and through correction of remediable health defects by the medical and dental professions.

CARL PUCKETT, Chairman,
W. W. RUCKS.

PUBLIC POLICY AND INSTRUCTION OF THE PUBLIC

As a basic consideration, in a democracy the State must furnish the means for the instruction of its citizenship. An uninformed people is not capable of operating a self government as history has abundantly shown. Such a people can exist only under a paternalistic form of government. If those in control of such a government are good and wise, the people, though ignorant, may be happy and contented. Indeed if the rulers of old had all been good and wise there would probably have never been an attempt to try a new form of government. But people were often misruled and sorely abused and the result of reaction from such abuses is the attempt of the people to take into their own hands the matter of government.

Now democracy is on trial. It is still, however, in the experimental stage. A democracy is the half way ground between the older forms of government and absolute socialism. The latter form of government may be ideal in theory but in so far as it has been attempted up to the present has nothing in practice to recommend it. It is perhaps because the people of the world are

not as yet ready for it, have not sufficiently progressed to function under it. The situation may be quite different a few centuries hence.

These remarks are intended to preface a statement of fact which is apparent to all who observe. Namely, that we are rapidly moving in the direction of Socialism. In the performance of its proper function the State has undertaken to instruct its citizenship in the matters of hygiene and the prevention of sickness and disease. It properly goes a step farther and gives at least the elements of diagnosis of common disorders and suggests the proper steps to be taken in order that correction may be made with the least possible amount of inconvenience to the individual. The State has gone further than this. It has sought out and is seeking out certain groups—particularly school children—arbitrarily making investigations, brings pressure to bear upon the citizens to do certain things. A reaction is surely developing as a result of this procedure. The people in no small group are saying that since the State has volunteered to make the investigation, found the difficulty, and suggested the remedy, why not go just a step further and supply the remedy or the means whereby it may be procured? These are the mutterings of socialism, pure and simple, and they are apparently gaining in volume. The State should properly care for its helpless dependents. This becomes an urgent duty when an afflicted dependent becomes a menace to the welfare of the community. The abuse of this duty is for the State to care for those who are amply able to care for themselves. The Medical profession is vitally concerned in this phase of the question.

These are intended as warnings rather than criticisms of the status of affairs. If, however, it smacks of criticism let this suggestion be offered as corrective: All persons in charge of public instruction in health matters should be thoroughly sold on the theory and plan of our form of government as at present constituted—I not so sold they should certainly refrain from spreading ideas which are vicious and opposed to our established institutions. These are the persons, who, more than any other group, mold public opinion.

It behooves the Medical profession to watch closely the personnel of all the public agencies who are conducting this instruction. The idea of such instruction is right and it is our duty to see to it that this right is not abused.

Special agencies for giving instruction along specific lines have, for the most part, done a splendid work. Foremost among these agencies are the Anti-tuberculosis Society and the American Red Cross. The work of these societies is favorably known to all of us. Every encouragement should be given them until such time as our institutions are prepared to take over these activities and thus avoid duplication.

Certain large corporations have undertaken to give health courses and courses in accident prevention and first aid to their employees who volunteer to take them. The work being done is, so far as we have looked into the matter, entirely wholesome and is to be commended. This instruction is given without expense to the employees.

The result of the campaign being waged by the Society for the Control of Cancer is a mat-

ter of doubt. It may be said to be discouraging.

The manner in which this campaign has been conducted is open to criticism. But this is not a criticism of those in our state who have had the matter in charge. In fairness it must be stated that they have displayed a degree of energy and enthusiasm such as to command the admiration of all of us. The facts are that we know so little about cancer and the most of that little is of a discouraging nature when all the facts are given to the public. And then to go before a church congregation on our own request and give a gloomy message to many who are unwilling listeners, is a somewhat humiliating task, and to many of us is actually repulsive. The only constructive information of real value to be given is to the effect that periodical examinations may enable the physician to discover a cancer in the early stage. To the unwilling listener this sounds like a bid for business, while to the panicky it is a scare-crow of gloom. It is recommended that the practice of spreading propaganda before church audiences be discouraged. All other agencies working for the promotion of good health are urging the periodic examination. It is our opinion that as fast as the profession, as a whole, develop the habit of making thorough examinations as a routine, the people will respond by having such examinations made. All the facts that in any way will aid in the control of cancer should be put together and passed to those State agencies whose business it is to give information to those who want it, and to give it in the usual manner. It is our recommendation that the Medical Association of Oklahoma use its influence to bring about such an arrangement.

HORACE REED.

REPORT OF COMMITTEE ON CONTRACT AND INDUSTRIAL PRACTICE

Fred S. Clinton, M.D., F.A.C.S., Chairman
Tulsa, Oklahoma

To the House of Delegates, Oklahoma State Medical Association Meeting, Muskogee, Oklahoma, May 4th to 6th, 1927.

This being a new state, or one of first impression, it would appear desirable to define an industrial physician, make some appropriate suggestions for action and set up certain tested standards.

Industrial practice may be traced in many centuries to the guilds gradually developing in Italy, Germany and England. It took definite form in the United States of America about a century ago with the first appointment of a railway surgeon, Dr. James P. Quinn of the Baltimore and Ohio Railway in 1834. The railroads pioneered in effecting the service in this country in a far flung manner. Mills, mines and factories in isolated regions preceded the great present day industries.

For many years this country was largely agricultural until the advent of the great war immediately transformed it into the leading industrial country of the world. Organized labor introduced the Workman's Compensation laws into the United States from England in 1910, and now forty-four of the states have adopted this child of industry to supplant the common law in dealing with the care of injured.

The great conquest of communicable disease

through preventive measures and the development of specialties, has reduced the number of the old-fashioned family physicians who formerly acted as guide, counselor and friend. Those of sufficient vision may easily glimpse the dawn of a new era in medicine. The prepared and trained physician of industry now has the opportunity to become reinvested with that greatest of all useful fields and title "family physician." However, he must not depend upon "pills and practice" but develop into an administrative person of executive ability, skilled in the science of his profession, knowledge of industry, hygiene, sanitation, know how to assume responsibility and demand but not abuse necessary authority.

In the preparation of this report an effort has been made to lay the foundation for intelligent consideration and action by selecting and using the labors of recognized authorities whose position or opportunity and means would make them safe guides in this rapidly expanding field of medicine. I am reading by title and appending a list of the papers, addresses and communications read and works consulted for those interested in a real romantic study of the shifting scenes in the evolution of medicine.

Individuals and groups may present information on industrial practice but the great body of the profession should retain an interest in and control over the action and development.

1. A group of members of the Oklahoma State Medical Association should be designated to study this problem and after informing themselves (2) confer with organized labor and the National Industrial Board, then present a report to the next meeting. (3) The Oklahoma State Hospital Association and other groups of industry willing to aid in securing sound adjustment and principles of practice as a safe guide may be consulted. (4) A symposium and open forum should be had at the next state meeting as an educational plan to increase the efficiency of industrial medicine and economy to industry and avoid the tendency to paternalism. (5) We should lead in solving our problems or the politicians and so called charity will take the play. The expense of the medical department in industry should be included in the overhead and spread on the cost sheet and expense account the same as legal, engineering and other fees and passed to the consumer. Then the management and others will exercise even greater care in the selection of trained men and lift this department on a par with the highest executive for it involves the rights of the individuals to the best service to protect and preserve the industrial army which is more valuable than the most delicate machinery. Society ultimately pays the debts and a selective service properly administered will increase production, lower cost, diminish friction and give more time for scientific study to unsolved problems, improve congenial relations and make for happiness and contentment.

CONTRACTS:

If the industry requires full time this may be on a salary basis but as Miller¹ remarks: "Such an arrangement tends to focus attention on the job as a whole rather than on the individuals concerned, because it is not in keeping with common professional methods; and because the amount of work could not be foretold and depended largely upon my own interest in it. I preferred to make my charges strictly on the basis of work done."

INDUSTRIAL PRACTICE:

"An² Industrial Physician is one who applies the principles of modern medicine and surgery to the industrial worker, sick or well, supplementing the remedial agencies of medicine by the sound application of hygiene, sanitation and accident prevention, and who in addition has an adequate and cooperative appreciation of the social, economic and administrative problems and responsibilities of industry in its relation to society."

In a communication April 9, 1927, from W. F. Draper, Assistant Surgeon General of the Bureau of Public Health Service, with reference to Contract in Industrial Practice in the United States he says:

"1. According to the National Industrial Conference Board,³ functions of medical departments in industry are preventative and curative. The activities entrusted to them relate principally to (1) physical examination of applicants for employment and workers returning to employment after illness; (2) periodic reexamination of workers in hazardous employment; (3) treatment and redressing of injuries; (4) diagnosis and treatment of minor medical cases as well as advice on medical problems; (5) sanitation of workshops and maintenance of satisfactory working conditions; (6) health education and accident prevention. It was found that every medical department engaged in industrial medical service did not perform all of these functions. In the small plants treatment of injuries was the only work done by the plant physician, who, as a rule, devoted only part of his time to industrial service or was subject to visits to the plant on call. It seems to be the plan, however, in the larger industries for the medical department to carry on all of these activities. The number and composition of the personnel of medical departments depend the most, generally, upon the size and character of the industrial establishment. In the larger plants physicians were generally employed full time, and their services might be supplemented by other physicians giving part time to the work. In many plants all the medical work would be under the charge of the physician employed on part time basis, but even in some of the smaller plants there were a few who employed physicians full time. In the medical department nurses play a prominent part in the work; and in the smaller plants they were frequently the only full time representatives of the medical department. One of the most important duties of the nurses was that of visiting sick and injured employees in their homes.

In the dental service, while a few plants employed full time dentists, in the majority of instances this work was on a part time schedule. Additional specialists, such as oculists, are occasionally attached to medical departments, either on part time basis or as consultants.

Physical examination of applicants is becoming a more common feature in the employment management, and as the purpose of physical examination becomes better understood by the worker, his objection is in a great measure disappearing. In the main, the object of such examination is not for the exclusion of the applicant, but rather for the selection of them for the occupations which are suitable to their physical condition. Of the 501 plants whose medical departments were investigated by the Conference Board, physical examination of respective em-

ployees was carried on by more than half of the number, and the average time given to these examinations was from 10 to 15 minutes. The percentage of rejections was very small. It was also found in an analysis of the injuries occurring in these plants that there were fewer injuries per worker in plants where a physical examination was required than in those which lacked such requirements. On the other hand, it is interesting to note that the medical cases were more frequent in the former. As a rule, physical examination was not confined only to applicants for employment, but in most cases workers who were returning to the plant after an illness were reexamined to insure them work suitable to their physical condition. In some cases all employees were reexamined at regular intervals as a preventive measure. It is interesting to note that practice of having the higher executives submit to physical examination is becoming more general. In the treatment of accident cases it was found that there was very little difference in the methods of the industrial physician and the private practitioner, but this investigation seemed to point out that the industrial physician had perhaps a keener realization of the fact that lack of employment brings economic loss, and he was therefore less disposed to coddle the patient. In certain types of industrial medical service the efforts of the industrial physician were greatly helped by intelligent first aid. An instruction in first aid has grown to be an important duty of the industrial management. This study seemed to bring out the fact that treatment of minor medical cases by the medical department was desirable, especially where it enabled the injured or sick employee to continue his work and in the fact that it prevented infection and more serious illness. Viewed from that standpoint therefore it seemed advisable that the plant department should be equipped with proper facilities for diagnosis. It was noted that where diagnosis revealed the necessity of extended treatment, the patient was generally referred to a private physician except, perhaps, in those remote communities where both diagnosis and treatment was conducted from the plant dispensary and hospital. The industrial physician usually is the adviser of the industrial management in all matters pertaining to plant sanitation and to the maintenance of sanitary working conditions, and in the number of instances they are under his direct supervision."

The Committee of Industrial Medicine of the Ontario Medical Assn., meeting in Toronto, Dec. 9, 1925, included among other addresses one from W. L. T. Addison, which closed by defining "The Duties and Responsibilities of a Works" Physician to Employee and Employer.

1. He should treat or have treated all accidents, wounds, or intoxications, occurring during employment and return the patients at as early a date as possible to full or useful employment.

2. He should give relief to all cases of general sickness not already attended, occurring in the plant, as long as the man continues at his work, if not at work, the patient should be referred to his regular physician.

3. He should endeavor to decrease the incidence of all infectious diseases occurring amongst employees of the plant, insisting on the isolation of such; (sending home persons with temperatures, or infections), and by the use of prophylactic measures and preventive education he should

strive to decrease the incidence of infection arising in wounds. By these measures he will keep the maximum number of employees at work.

4. Arising out of the above the physician should
 - (a) Be familiar with the sources of accidents, wounds, intoxications, infections in wounds, and the sources and distribution of infectious diseases.
 - (b) He should have the right, and exercise the right, to inspect and advise in regard to sources of accidents, e.g., lack of guards on machines, power lines, elevators, fumes, dust, etc.
 - (c) He should have the right to recommend changes in the staff of employees if they are careless and thus tend to increase the hazards of other employees (especially foremen), or if they are dirty or careless in habits and be a source of infection to others.
 - (d) He should examine employees exposed to intoxications and as a result of his examination determine the advisability from the viewpoints of employer and employee of the workman carrying on at his present job.
 - (e) He should examine all applicants for employment to determine whether they are physically defective or liable to break down under the conditions of their probable employment, i.e., physical examination, in some cases psychological examination, i.e., for alertness, manual dexterity, etc. This is important as it enables certain easily detected disabilities to be discovered, even in a superficial examination, such as hernias, bad hearts, and bronchitic conditions; further, the works' physician has the opportunity of taking the first steps in educating the employees to come to him with what he might consider relatively trivial complaints, colds, minor cuts, etc.
 - (f) He should carry out such periodical examinations of the employees as may be necessary.
5. In order to show that results are being obtained and to discover sources of accidents and infections, he should keep some system of records.
6. He should be responsible for emergency appliances, dressings, first aid kits, masks, etc., and furnish a report from time to time that the same are complete and effective.
7. He should inspect all sanitary arrangements, urinals and water closets, washrooms, clothing and changing rooms, etc. Inspection should also be made of all feeding arrangements.
8. The physician should endeavor to supply health education in regard to minor points, which should include systematic talks on first aid and prevention of accidents, intoxications, infections, and disease. The danger of infected persons or infected wounds should be constantly instilled into the employee.
9. The physician should understand that it falls within his province, just as is the case with a medical officer in the army, to protect the employee against pressure being brought to bear on him to continue at his work when in the opinion of the physician he would be likely to suffer from

the same or would be a danger to other employees.

10. The physician should report directly, at definite intervals, on all matters which come under his survey, to the general manager of the plant and should have the right to discuss with him all difficulties arising out of his work. He should be assured of the support of such a manager if he is to achieve success."

In the presentation of this report, if I have stimulated you to think this problem through and endeavor to act in time to aid the young men and all others to adjust themselves to this changing condition and render a greater service to society this will be reward enough.

The older men in industry or medicine may not see or care for the coming change. However, it is on the way and when you meet one of them do not argue with him, just quote this little poem used by Dr. C. R. Hook,⁴

"An old man traveling a lone highway
Came in the evening, cold and gray
To a chasm vast and deep and wide.
The old man crossed in the twilight dim,
But he paused when safe on the other side
And builded a bridge to span the tide.
"Old man," said a fellow traveler near,
You're wasting your time -abuilding here.
Your journey will end with the closing day.
You never again will pass this way.
You've crossed this chasm deep and wide.
Why build you this bridge in the eventide?"
The builder lifted his old, gray head,
Good friend, in the way I have come, he said
There followed after me today
A youth whose feet must pass this way.
This stream which has been as naught to me
To that fair youth might a pitfall be.
He, too, must cross in the twilight dim,
Good friend, I am building this bridge for him."

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"Medical Supervision of Factory Employees" Result of Five Years' Experience. W. Irving Clark, Jr., M. D., Worcester, Mass. (Read before the Sec. on Preventive Medicine and Public Health at the 67th Annual Session Amer. Med. Assn. Detroit, June, 1916.

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"Medical Supervision in the Industrial World" By Irving Fisher, Bulletin of the Committee of One Hundred on National Health, Being a Report on National Vitality, Its Wastes and Conservation, No. 30, Washington, D. C., July, 1909.

"The Physician in Industry" By John J. Moorhead, M. D., New York Post Graduate School and Hospital. Address delivered at Annual Meeting National Metal Trades Assn., New York City, April 24, 1924.

"Medical Phases of Industrial Work" Read before County Med. So., Feb. 21, 1922, by G. L. Hazlett, M. D., Pittsburg Med. Bulletin.

"The Medical Consultant in Industry and His Value To The State." Robert S. McBirney, M. D. Medical Inspector of Factories, Bureau of Industrial Hygiene, N. Y. St. Dept. of Labor. N. Y. City. American Journal of Public Health 16: 1182-1185 Dec., 1926.

"Modern Industrial Medicine" C. G. Farnum, M. D., Peoria, Ill. Read before the joint meeting of the Sec. on Preventive Medicine and Public Health and the Section on Orthopedic Surgery at the 69th Annual Session of the Amer. Med. Assn., Chicago, Ill., June, 1918.

"Medical Service in the Conservation of Industrial Man Power". C. D. Selby, M. D., Industrial Hygienist(by Temporary Appointment) U. S. Public Health Service, Toledo, Ohio. Read before the joint meeting of the Section on Preventive

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"Traumatic Surgery" John J. Moorhead, M. D. "Industrial Medicine and Surgery" Harry E. Mock, M. D.

"Reference Handbook of the Medical Sciences" Vol. viii.

"Surgical Treatment" James Peter Warbasse, M. D.

REPORT OF CANCER COMMITTEE, STATE MEDICAL ASSOCIATION, MUSKOGEE, OKLAHOMA, MAY 5, 1927

We are pleased to report that though the Cancer Committee has not held any special meetings, it has endeavored to aid in the carrying on of cancer educational work which has already been set in motion by other agencies and committees during the past six years.

Due to the inability of securing replies from various localities where educational work has been done by individual physicians and by County Medical Societies, this report is not exact nor in detail though it is approximately correct.

Since our last meeting, more than fifty public lectures have been given before non-medical audiences upon the subject of "Cancer" and "What the Public Should Know About Cancer." At these public gatherings more than fifteen thousand people have heard these lectures. Also, many medical societies have held special meetings and have read and discussed papers upon this subject. Five cancer clinics, sponsored by County Medical Societies and visiting physicians, have been held and in these clinics more than one hundred cases were presented for diagnosis. Forty per cent of the cases examined were positive and 60 per cent were negative.

Twenty five hundred leaflets and booklets, furnished by The American Society for the Control of Cancer, have been distributed throughout the State. In addition to this, our State Medical Journal has carried several editorials and original articles on the subject of cancer in addition to numerous abstracts.

May I call attention to some encouraging facts of cancer education by telling you that when this educational work was first begun in our State, about six years ago, of all the cases presented at the cancer clinics for examination, about 60 per cent were positive, whereas during the past year, only about 40 per cent of the cases examined were positive. After noting a similar reduction of percentage of positive cases in other states where cancer education has not been carried on, we are encouraged that our campaign of education apparently is also slowly but most certainly having the desired effect; namely of persuading people to call upon their family physician and surgeon at once upon the slightest suspicion of any lesion which might be cancer, thereby, we know that more cases can be properly treated in the early stages, in which stage only, according to our present knowledge, is cancer entirely curable.

EVERETT S. LAIN, M. D.
L. A. TURLEY, A. M., Ph. D.
V. C. TISDAL, M. D.

THE SECTION ON SURGERY AND GYNECOLOGY

The Surgical Section of the Oklahoma State Medical Association met in regular session in the Masonic Temple, Muskogee, Oklahoma, Wednesday, May 4, 1927, 3:00 P. M., with Dr. A. W. Pigford, Tulsa, Oklahoma, presiding.

Motion was made and carried that the courtesy of the floor be extended all visitors. Motion was made and carried that a stenographer be secured for the purpose of having a permanent record of all discussions, the necessary expenses to be pro-rated among members of the Surgical Section.

Dr. Lloyd M. Sackett, Medical Arts Bldg., Oklahoma City, who was elected Chairman for the ensuing year was nominated by Dr. G. A. Wall, Tulsa. Dr. Louis Henry Ritzhaupt, 123½ W. Oklahoma Ave., Guthrie, was elected Secretary of the section.

The following papers were read before the section:

Chairman's Address—"The History and Progress of Gynecology"—Dr. A. W. Pigford, Tulsa.

"The Fibroid Uterus"—Dr. Louis H. Ritzhaupt, Guthrie. Discussion: Dr. Lloyd M. Sackett, Oklahoma City; Dr. A. L. Blesh, Oklahoma City; Dr. Louis H. Ritzhaupt.

"Cervical Cancer"—Dr. W. H. Livermore, Chickasha. Discussion: Dr. G. A. Wall, Tulsa; Dr. A. L. Blesh, Oklahoma City; Dr. Lloyd M. Sackett, Oklahoma City; Dr. McLain Rogers, Clinton; Dr. W. H. Livermore.

"Oblique Inguinal Hernia, A Fundamental Principle Underlying Its Cure"—(Lantern Slides) Dr. G. A. Wall, Tulsa. Discussion: Dr. James M. Byrum, Shawnee; Dr. Louis H. Ritzhaupt, Guthrie; Dr. Wm. P. Fite, Muskogee; Dr. G. A. Wall.

"Post Operative Massive Collapse of the Lungs"—Dr. D. L. Garrett, Tulsa. Discussion: Dr. A. L. Blesh, Oklahoma City; Dr. R. V. Smith, Tulsa; Dr. Horace Reed, Oklahoma City; Dr. Chas. S. Neer, Vinita; Dr. R. M. Sheppard, Tahalina; Dr. A. W. Pigford, Tulsa; Dr. D. L. Garrett.

"The Broader Viewpoint of Arthritis"—Dr. Wm. H. Bailey, Oklahoma City. Discussion: Combined with the following paper.

"Acute Osteomyelitis"—Dr. R. V. Smith, Tulsa. Discussion: Dr. Horace Reed, Oklahoma City; Dr. G. E. Henschen, Sherman, Texas; Dr. C. J. Fishman, Oklahoma City; Dr. Ira B. Oldham, Muskogee; Dr. W. H. Livermore, Chickasha; Dr. LeRoy Long, Oklahoma City; Drs. Wm. H. Bailey and R. V. Smith closing.

"Repair of Injured Peripheral Nerves"—Dr. Samuel R. Cunningham, Oklahoma City; Discussion: Dr. LeRoy Long, Oklahoma City; Dr. W. H. Livermore, Chickasha; Dr. Horace Reed, Oklahoma City; Dr. Samuel R. Cunningham.

"Surgery in its Application to the Treatment of Selected Cases of Pulmonary Tuberculosis"—Dr. Horace Reed, Oklahoma City. Discussion: Dr. R. M. Sheppard, Tahalina; Dr. Lewis J. Moorman, Oklahoma City; Dr. Horace Reed.

"The Surgical Treatment of Tuberculosis Peritonitis"—Dr. LeRoy Long, Oklahoma City. Discussion: Dr. McLain Rogers, Clinton; Dr. R. M. Sheppard, Tahalina; Dr. Lewis J. Moorman, Oklahoma City; Dr. Fenton M. Sanger, Oklahoma

City; Dr. D. L. Garrett, Tulsa; Dr. Harry D. Boswell, Henryetta; Dr. LeRoy Long.

"The Surgical Procedure of Choice for Eradication of Gonorrhea in the Female"—Dr. F. A. Hudson, Enid; Discussion: Dr. Robert M. Howard, Oklahoma City; Dr. Horace Reed, Oklahoma City; Dr. A. W. Pigford, Tulsa; Dr. Dorsey P. Chambers, Stilwell; Dr. F. A. Hudson.

"Extra-Uterine Pregnancy"—Dr. Fenton M. Sanger, Oklahoma City. Discussion: Dr. F. A. Hudson, Enid; Dr. Horace Reed, Oklahoma City; Dr. Robert M. Howard, Oklahoma City; Dr. A. W. Pigford, Tulsa; Dr. Fenton M. Sanger.

"Restoration of Ankylosed Joints"—(Lantern Slides) Dr. W. H. Sisler, Tulsa.

Dr. G. E. Henschen, Sherman, Texas, presented a case report with roentgenograms showing marked and rapid bone regeneration of area around right acetabulum, and disappearance of metastatic processes in right lung and manubrium following deep therapy.

Section adjourned.

A. W. PIGFORD, Chairman.

ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M. D.
717 North Robinson St., Oklahoma City

Ischaemic Contracture — Experimental Study.
Paul N. Jepson, *Ann. Surg.*, lxxxiv, 785, Dec., 1926.

A good definition and concise review of the literature is given at the beginning of this article. Experiments were carried out upon dogs. Ether was used. In the first series attempts were made to produce the deformity by means of splints, casts, and bandages, but these attempts were unsuccessful. In the second series an Esmarch rubber bandage was used, and left on for varying periods of time. This produced only a temporary deformity. In the next series, dogs were operated upon in pairs, one having the femoral vein ligated, the other having an incision made six cm. below Poupart's ligament, encircling more than one-third of the thigh and running down through fascia to the muscle. In both animals the extremity operated on was cold and bluish within a few minutes. A deformity resembling main-en-griffe deformity developed in both and persisted for from six to nine days. In the next series the two operations were combined. Almost the same deformity developed and lasted a few hours longer. After the wounds had healed, an Esmarch bandage was applied at the site of operation and left on for six to twenty-four hours. These animals developed typical deformity which in some persisted from two to eighteen months. After having produced the deformity, the next procedure was to determine a method of preventing it. An Esmarch bandage was left on for eight hours—there was oedema and signs of poor circulation and beginning contracture of the toes. Six hours later the wound was opened, blood and serum evacuated and two drainage tubes placed deep in the inter-muscular space. The next day the swelling had gone down, and four days later the dog was walking normally. The experiment was repeated often enough to bring out the fact that intrinsic pressure is a factor in this condition. The author concludes that the contracture is due to several factors: the impairment of venous flow, extravasation

tion of blood and serum, swelling of the tissues with consequent pressure on the blood vessels and nerves in the involved area. If this be true, early incision with drainage would be of value.

Osteoplastic Support of the Spine in Pott's Disease, R. R. Wreden, Leningrad, Russia, Ann. Surg., lxxxv, 35, Jan. 1927.

The difficulty or impossibility of securing and maintaining proper support of the spine by means of braces or orthopaedic corsets led the author to devise a means of supporting the spine on the pelvis as well as fixing the vertebrae. In disease of the lower dorsal and lumbar region he transfers the weight of the trunk from the diseased vertebrae to the pelvis. In cases where the fourth and fifth lumbar vertebrae are involved he places as a transverse support or "osseous rafter" a strong bone graft resting on the iliac crests and upon which the spine of the third lumbar vertebra rests. The operation is described in detail. Patient is kept flat in bed for six weeks and begins to walk after seven weeks with no additional support. For disease higher up he uses an oblique support consisting of two long bone grafts acting as a trestle. The lower ends of the graft rests, one on each side of the iliac crest and the upper ends cross under the spine of the lowest sound vertebra. The after-treatment is the same as for the transverse support. Ten cases have been operated on with satisfactory results.

The Repair Processes in Wounds of Tendons, and in Tendon Grafts. John H. Garlock, Ann. Surg., lxxxv, 92, Jan., 1927.

The reports experimental work upon dogs. Fine silk sutures were used. In simple tenorrhaphy the process of repairs is similar to that in other soft parts. During the first three days the scar will not stand stress and strain. After the fifth day the scar stretches somewhat but not to a marked degree. After this day the scar will stand active motion. After the fifth day the scar gradually increases in strength and density. After the twenty-eighth day it was difficult to find the point of suture. Tendon grafts were shown to live as such and the process of repair was similar to the simple suture. He concludes that after a tenorrhaphy, active motion within the limits of pain may be started after the fifth postoperative day, passive motion not before the fifteenth or sixteenth day. After a tendon graft, active motions may be started on tenth day but apparatus should not be removed until the twenty-fifth day.

EYE, EAR, NOSE and THROAT

Edited by Jas. C. Braswell, M. D.
726 Mayo Bldg., Tulsa

Papillitis, Headache and Mental Depression from Osteoma of Septum. Otis Wolfe, Am. J. Ophth 9:340-341 (May) 1926.

Wolfe reports a case of a man, aged 48, who, thirteen years previously, had been kicked in the head by a horse, following which he began to have headaches. These seemed to start in the occipital region and then would involve the whole head. The patient was never entirely free from headache and pressure in his head, but at times

had attacks lasting for two or three weeks. In the last two years the headaches were so severe that he was completely incapacitated. The pain was most severe between 10:00 a. m. and 2:00 p. m., and was so severe as to require opiates.

The patient was referred to the author on account of a feeling of pressure back of the right eyeball, and the blurring of vision in this eye. At this time he was in a hospital suffering from an acute attack, and opiates were necessary to quiet him. A roentgenogram revealed fracture of the inner plate of the skull in the occipital region, approximately where he had been kicked. Operative measures on the skull to relieve the intracranial pressure were being considered.

The vision in the right eye was 20-30. It was not improved by refraction. The right disk margin was fuzzy and slightly edematous, with engorgement of the veins. Perimeter findings were suggestive of a scotoma with slight enlargement of the blind spot. With the campimeter, a small, but positive, central scotoma was outlined for red and blue.

Nasal examination showed only a slight obstruction to breathing. The septum was deviated to the right. There was a large compensatory enlargement of the left middle turbinate. The septum did not shrink much with epinephrine and cocaine, and a cotton tipped probe could not be passed between the right middle turbinate and the bulge of the septum. The roentgenogram revealed a very thick, bony septum. At this time it was elicited that the patient's symptoms were precipitated and exaggerated if he caught the least cold in his head.

Surgery on the occipital region was deferred until the nose could be operated on, and under local anaesthesia a submucous resection was performed. Bending sharply to the right and extending out from the sphenoid rostrum, the posterior septum was solid bone and varied from 5 to 7 mm. in thickness. It was tightly wedged up against the right middle turbinate. The sphenoid was exposed, but no pus or necrosis was found.

A few hours after leaving the operating room the "pressure feeling" seemed relieved. The next day he had very little headache, and the change in his mental condition was very noticeable. From the third day on, he had absolutely no headache and has had none since. The patient has become entirely different, and his mental condition has completely cleared up. A few months after the nasal operation, vision was 20-20 and no scotoma was found.

A case of Aspiration of a Tooth Prosthesis Into the Larynx. S. Kompanejetz, Ztschr. f. Hals-, Nasen-u. Ohrenh. 13:484 (Jan. 18) 1926.

Up to the year 1916, about 2000 cases of foreign bodies in the larynx, trachea and bronchi have been described, according to O. Chiari. Kompanejetz reports the case of a patient who complained that he had swallowed a prosthesis with four teeth while he was asleep. Roentgenoscopy showed a foreign body, the lower end of which was visible 2 cm. above the jugulum sterni. In the surgical clinic the esophagotomy externa was performed. The prosthesis could be palpated in the esophagus. A bougie was introduced by the assistant into the esophagus through the mouth for better orientation. The patient vomited and became very cyanotic. An emergency tracheotomy

was necessary. The author detected the foreign body in the larynx and removed it by laryngofissure under chloroform narcosis. In spite of the fact that the foreign body had remained twenty-eight days in the larynx, decubitus was not present, but the motility of the vocal cords was interfered with, probably on account of a perichondritis.

The Surgery of Malignant Disease of the Pharynx, Trotter, W., Brit. M. J., 1926, i, 269.

In the laryngopharynx, carcinoma usually does not progress with great rapidity, especially if the patient is edentulous, but oral sepsis seems to aggravate it. It is of two types, the posterior or hypopharyngeal and the epipharyngeal. The first is limited practically to women, appears at a relatively early age, and often causes for a period of years slight difficulty in swallowing, choking during meals, and chronic laryngitis.

In early stages a laryngoscopic examination may not establish the diagnosis, but later may reveal an oedema of the arytenoids or an epitheliomatous ulcer on the anterior pharyngeal wall. A bronchoscopic examination under anaesthesia should always be done when indicated.

Epipharyngeal carcinomata occur most frequently in men after middle life and have their starting points on the epiglottis, aryepiglottic fold, lateral pharyngeal wall, and pyriform sinus. In the cases of middle-aged persons, pharyngeal malignancy should be suspected whenever any kind of abnormal sensation is felt in the throat persistently and an examination should be made for ulcer, a collection of mucus, and a fixed arytenoid.

In cases in which a radical operation is out of the question, great relief and some prolongation of life are gained from such palliative measures as tracheotomy and complete clearing of the mouth. In operable cases of a serious type radical operation must include complicated plastic work because of unavoidable mutilation. The epipharyngeal type of case is more favorable because the malignancy and tendency toward gland infection are less and a mutilating operation is unnecessary. Chloroform is administered first by mouth and later through a tracheotomy tube. In the tracheotomy, a disk 1-3 inch in diameter is removed from the anterior wall. The tube is left in place for about a week. When the glands are palpably involved a very complete dissection is done with removal of the jugular vein and ligation of the external carotid close to the bifurcation, but with preservation of the sternomastoid muscle for plastic purposes.

In the operative work the method of access on which all procedures are based is lateral pharyngotomy.

A vertical incision is made over the middle aspect of the larynx down to the cartilages, and the infrahyoid muscles and constrictors are so turned that the great cornu of the hyoid and thyroid ala may be exposed and removed. The lax pharyngeal wall is exposed, the wound protected from contact with mucus, and the growth removed with an adequate margin. The muscles are then brought together and the neck wound is packed with boric acid powder and left wide open. A small rubber catheter is introduced into the pharynx and brought out through the mouth for feed-

ing. This catheter is left in place for about five days and then passed for individual feedings.

In favorable cases healing is usually complete and swallowing is normal after about a month and the power of speech rapidly returns.

Evolutionary Factors in the Production of Pharyngeal Diverticula., Negus, V. E.: J. Laryngol. & Otol., 1925, xl, 702.

The author is of the opinion that if man, who is adapted to a diet of soft and finely divided food, begins, when edentulous to swallow solid lumps of unmastered food, herniation of the oesophagus is liable to occur if the habit is continued.

The main factors responsible are: (1) misdirection of the bolus which, impinging upon the oesophageal wall, stretches and separates its muscular fibers; (2) the absence of a funnel-like oesophageal opening; and (3) failure of the cricopharyngeus muscle to relax.

This article contains numerous illustrations.

The Significance and Prevention of Blindness Due to Intranasal Disease., Gottlieb, M. J., Laryngoscope, 1925, xxxv, 844.

Blindness or a decrease of visual capacity caused by disease of the nasal accessory sinuses is far more frequent than is generally supposed.

Retrolbulbar neuritis is due most frequently to disease of the nasal accessory sinuses and abscesses of the teeth, and less commonly to toxemias from the intestines or tonsils, syphilis, and such substances as lead, arsenic, and acetone. The sphenoid and ethmoid are the principal sources of infection as the optic commissure is often situated directly over the former and the nerve progressing forward to the eye lies for about half its length in intimate contact with the latter. The vulnerability of the nerve to proximate disease is further increased by pneumatization and narrow optic canals.

Retrolbulbar neuritis is an interstitial neuritis affecting the most sensitive axial bundle innervating the macular region. The acute and chronic forms differ chiefly in intensity. The acute form, which is usually unilateral, is associated with severe headache on the same side, pain in the eye on backward pressure and on movement, and rapid impairment of sight which is noted first as a central blur or scotoma and progresses until only a narrow peripheral field remains. The fundus is negative at first but later may show congestion of the nerve head.

While the course of the condition is rapid, the prognosis is good provided the underlying cause is promptly removed. In the chronic form recovery is not as liable to be as complete as in the acute form. If it is possible to delay operation on the sinuses for a sufficient length of time to exclude other sources of infection, this should be done, but in many cases the progress of the condition is so rapid that the surgeon is justified in opening up the sinuses at once without further investigation. The importance of haste for the preservation of vision cannot be overemphasized.

ROSTER

OKLAHOMA STATE MEDICAL ASSOCIATION

1927

ADAIR COUNTY

T. W. Blackburn	Stilwell
D. P. Chambers	Stilwell
R. M. Church	Stilwell
B. F. Collins	Claremore
Jos. A. Patton	Stilwell
F. W. Rogers	Watts
R. L. Sellers	Westville

ALFALFA COUNTY

Z. J. Clark	Cherokee
Milton T. Evans	Aline
C. O. Gingles	Carmen
L. T. Lancaster	Cherokee
H. R. Shannon	Goltry
A. G. Webber	Goltry

ATOKA COUNTY

T. H. Briggs	Atoka
J. S. Fulton	Atoka
C. C. Gardner	Atoka
L. E. Gee	Stringtown
J. W. Rollins	Atoka
C. C. Rose	Atoka

BECKHAM COUNTY

L. V. Baker	Elk City
J. M. Denby	Carter
W. W. Fox	Carter
E. S. Kilpatrick	Elk City
J. E. Levick	Carter
R. C. McCreery	Erick
W. D. Oliver	Erick
Thos. D. Palmer	Elk City
G. W. Phillips	Sayre
M. Shadid	Elk City
H. K. Speed	Sayre
W. P. Spence	Sayre
G. M. Stagner	Erick
J. E. Standifer	Elk City
O. C. Standifer	Elk City
DeWitt Stone	Sayre
W. C. Threlkeld	Sweetwater
V. C. Tisdal	Elk City
J. D. Warford	Erick
O. N. Windle	Sayre

BLAINE COUNTY

J. S. Barnett	Hitchcock
J. W. Browning	Geary
F. R. Buchanan	Canton
A. C. Byars	Longdale
W. F. Griffin	Watonga
V. R. Hamble	Okeene
J. B. Leisure	Watonga
Geo. M. Holcomb	Okeene
J. M. Murdock	Okeene
A. F. Padberg	Canton

BRYAN COUNTY

J. A. Bates	Pampa, Texas
J. R. Allen	Healdton
D. Armstrong	Durant
J. L. Austin	Durant
W. G. Austin	Mead
P. L. Cain	Albany

Roy L. Cochran	Caddo
B. B. Coker	Durant
J. T. Colwick	Durant
C. D. Dale	Caddo
R. P. Dickey	Kenefick
H. B. Fuston	Bokchito
R. H. Grasman	Caddo
C. J. Green	Durant
A. S. Hagood	Durant
John A. Haynie	Durant
W. A. Houser	Durant
F. M. Jackman	Mead
J. R. Keller	Calera
R. A. Lively	Durant
D. C. McCalib	Utica
W. H. McCarley	Colbert
Howard McKinney	Durant
C. F. Moore	Durant
C. F. Paramore	Durant
H. P. Pope	Bennington
C. G. Price	Durant
S. W. Rains	Aylesworth
G. M. Rushing	Durant
R. E. Sawyer	Durant
A. C. Shuler	Durant
J. L. Shuler	Durant
C. E. Wann	Albany
A. J. Wells	Calera
W. S. Works	Bokchito

CADDO COUNTY

P. H. Anderson	Anadarko
W. C. Barton	165 Elk Place, New Orleans, La.
Sam'l Blair	Apache
B. D. Brown	Apache
I. S. Butler	Alfalfa
Geo. C. Campbell	Anadarko
J. H. Cantrell	Carnegie
I. Ross Clark	Carnegie
Geo. B. Coker	Cyril
F. Dinkler	Ft. Cobb
W. L. Dixon	Cement
Edw. W. Downs	Hinton
C. P. Gillespie	Chilocco
W. T. Hawon	Binger
E. W. Hawkins	Carnegie
J. J. Henke	Hydro
A. F. Hobbs	Hinton
Chas. R. Hume	Anadarko
E. L. Inman	Apache
R. E. Johnston	Bridgeport
W. W. Kerley	Anadarko
P. L. McClure	Ft. Cobb
C. B. McMillan	Gracemont
C. N. Meador	Anadarko
W. B. Padberg	Carnegie
W. B. Putnam	Carnegie
F. W. Rogers	Carnegie
R. D. Rector	Anadarko
C. A. Smith	Hinton
A. H. Taylor	Anadarko
H. Van Wade	Cement
R. W. Williams	Anadarko
S. E. Williams	Hydro

CANADIAN COUNTY

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Jesse Bird	Calumet
H. C. Brown	El Reno
W. B. Catto	El Reno
H. A. Dever	El Reno
P. F. Herod	El Reno
A. L. Johnson	El Reno
Thos. Lane	El Reno
W. P. Lawton	El Reno
P. B. Myers	El Reno
J. W. Muzzy	El Reno
D. P. Richardson	Union City
J. T. Riley	El Reno
S. S. Sanger	Yukon
F. S. Stough	Geary
G. W. Taylor	El Reno
J. E. Tomkins	Yukon
L. W. Wolfe	Okarche

CARTER COUNTY

David Autry	Marietta
J. T. Barnwell	Graham
E. R. Barker	Healdton
J. E. Best	Ardmore
F. W. Boadway	Ardmore
J. H. Cameron	Healdton
H. H. Campbell	Wilson
D. E. Cantrell	Healdton
A. G. Cowles	Ardmore
J. L. Cox	Ardmore
S. DePorte	Ardmore
T. W. Dowdy	Wilson
A. Y. Easterwood	Ardmore
O. J. Gee	Ardmore
L. D. Gillespie	Berwyn
Walter Hardy	Ardmore
W. G. Hathaway	Lone Grove
R. H. Henry	Ardmore
H. A. Higgins	Ardmore
J. T. Hines	Earlsboro
T. J. Jackson	Ardmore
W. M. Johnson	Ardmore
G. E. Johnson	Ardmore
C. A. Johnson	Wilson
O. A. Kirby	Marietta
J. R. McCracken	Wilson
J. C. McNeese	Ardmore
J. R. Pollock	Ardmore
W. C. Sain	Ardmore
J. W. Shelton	Ardmore
E. E. Shivers	Wilson
L. B. Sutherland	Wilson
R. C. Sullivan	Ardmore
Dow Taylor	Woodford
F. P. Con Keller	Ardmore
L. B. Woods	Wilson

CHEROKEE COUNTY

J. S. Allison	Tahlequah
Swartz Baines	Tahlequah
A. A. Baird	Tahlequah
T. J. Bond	Tahlequah
W. G. Blake	Tahlequah
P. H. Medearis	Tahlequah
J. M. Thompson	Tahlequah

CHOCTAW COUNTY

E. R. Askew	Hugo
R. L. Gee	Hugo
C. H. Hale	Boswell
K. P. Hampton	Soper
G. E. Harris	Hugo
Thos. Henderson	Ft. Towson
W. N. John	Hugo

E. A. Johnson	Hugo
J. S. Miller	Hugo
J. D. Moore	Hugo
R. J. Shull	Hugo
Reed Wolfe	Hugo

CLEVELAND COUNTY

C. A. Bobo	Norman
Arthur Brake	Norman
G. M. Clifton	Norman
B. H. Cooley	Norman
L. H. Day	Norman
T. J. Dodson	Norman
Gayfree Ellison	Norman
J. J. Gable	Norman
D. W. Griffin	Norman
F. E. Hilysmeyer	Norman
J. B. Lambert	Lexington
R. D. Lowther	Norman
W. T. Mayfield	Norman
Gertrude Nielsen	Norman
Chas. Rayburn	Norman
Carl Steen	Norman
E. F. Stephens	Norman
R. E. Thacker	Lexington
J. M. Thuringer	Norman
L. A. Turley	Norman
G. W. Wiley	Norman
J. M. Williams	Norman

COAL COUNTY
(See Atoka)

Frank Bates	Coalgate
W. T. Blount	Tupelo
J. B. Clark	Coalgate
H. G. Goben	Lehigh
W. B. Wallace	Coalgate

COMANCHE COUNTY

H. A. Angus	Lawton
J. T. Anthony	Lawton
C. W. Baird	Medicine Park
G. S. Barber	Lawton
Jackson Broshears	Lawton
E. B. Dunlap	Lawton
P. G. Dunlap	Lawton
L. T. Gooch	Lawton
S. S. Gooch	Lawton
F. W. Hammond	Lawton
J. R. Hood	Indianola
C. P. Hues	Lawton
C. W. Joyce	Fletcher
G. G. Kerr	Chattanooga
L. C. Knee	Lawton
T. R. Lutner	Lawton
J. W. Malcom	Lawton
C. W. Martin	Elgin
W. J. Mason	Lawton
W. B. Mead	Lawton
E. Brent Mitchell	Lawton
A. H. Stewart	Lawton

COTTON COUNTY

C. W. Alexander	Temple
C. F. House	Walters

CRAIG COUNTY

F. M. Adams	Vinita
Louis Bagby	Vinita
C. P. Bell	Welch
Wm. M. Campbell	Vinita
N. L. Cornwell	Meridian
B. L. Elam	Centralia
F. T. Gastineau	Vinita
P. L. Hayes	Vinita

A. W. Herron	Vinita
W. R. Marks	Vinita
Robt. L. Mitchell	U.S.V. Hospital, Muskogee
C. S. Neer	Vinita
E. A. Pickens	Grove
G. H. L. Staples	Bluejacket
B. B. Stough	Vinita
C. F. Walker	Vinita
J. L. Wharton	Ketchum

CREEK COUNTY

W. G. Bisbee	Bristow
O. C. Coppedge	Bristow
O. S. Coppedge	Depew
O. H. Cowart	Bristow
G. C. Croston	Sapulpa
C. M. Driver	Mounds
W. E. Harrington	Depew
J. E. Hollis	Bristow
Leon Izgur	City Hosp. Welfare Is. New York
Alva Jones	Sapulpa
Ellis Jones	Sapulpa
E. W. King	Sapulpa
E. W. King	Bristow
R. E. Leatherock	Drumright
P. K. Lewis	Sapulpa
A. E. Martin	Pampa, Texas
C. R. McDonald	Manford
J. B. Lampton	Sapulpa
W. P. Longmire	Sapulpa
J. M. Matenlee	Sapulpa
C. L. McCallum	Sapulpa
C. H. Morris	Slick
Paul Mote	Sapulpa
Wm. J. Neal	Drumright
J. T. Price	Shamrock
C. B. Reese	Sapulpa
E. W. Reynolds	Bristow
S. W. Reynolds	Drumright
W. P. Robinson	Sapulpa
Paul Sanger	Drumright
Chas. Schrader	Bristow
O. W. Starr	Drumright
Roy M. Sweeney	Sapulpa
Z. G. Taylor	Mounds
W. F. Turner	Sapulpa
E. R. Weaver	Shamrock
John M. Wells	Bristow
Geo. H. Wetzel	Sapulpa
J. Clay Williams	Bristow

CUSTER COUNTY

C. J. Alexander	Clinton
W. I. Basinger	Butler
T. A. Boyd	Weatherford
E. E. Darnell	Clinton
J. T. Frizzell	Clinton
D. Gaede	Weatherford
B. R. Gayman	Butler
K. D. Gossom	Custer City
J. R. Hinshaw	Butler
A. J. Jeter	Clinton
Ellis Lamb	Clinton
C. H. McBurney	Clinton
O. H. Barker	Custer City
W. W. Parker	Thomas
McLain Rogers	Clinton
N. E. Ruhl	Weatherford
J. J. Williams	Weatherford
F. R. Vieregg	Clinton

DEWEY COUNTY

Frank W. Allen	Leedey
W. E. Seba	Leedey

GARFIELD COUNTY

J. W. Baker	Enid
R. G. Baker	Enid
Paul B. Champlin	Enid
L. W. Cotton	Enid
G. G. Harris	Helena
Julian Field	Enid
Glenn Francisco	Enid
J. W. Francisco	Enid
D. S. Harris	Drummond
G. E. Hartman	C. H. Buhl Hos. Sharon, Pa.
J. H. Hayes	Enid
T. B. Hinson	Enid
P. W. Hopkins	Enid
F. A. Hudson	Enid
W. L. Kendall	Enid
W. G. Kiebler	Enid
W. E. Lamerton	Enid
J. E. Mahoney	Enid
S. N. Mayberry	Enid
S. H. McEvoy	Enid
A. L. McInnis	Enid
W. B. Newell	Enid
A. S. Piper	Enid
W. H. Rhodes	Enid
D. D. Roberts	Enid
F. P. Robinson	Hillsdale
J. N. Shaunty	Enid
J. R. Swank	Enid
Roy D. Stone	Covington
C. W. Tedrowe	Enid
H. F. Vandever	Enid
John R. Walker	Enid
J. M. Watson	Enid
R. H. Wigner	Enid
A. E. Wilkins	Covington
E. J. Wolff	Waukomis

GARVIN COUNTY

James R. Callaway	Pauls Valley
John R. Callaway	Pauls Valley
J. E. Cochran	Byars
H. V. Dresbach	Maysville
Lewis Gaddy	Stratford
H. R. Goshorn	Humboldt, Kans.
W. P. Greening	Pauls Valley
T. F. Gross	Lindsay
G. L. Johnson	Pauls Valley
E. H. Lain	Lindsay
J. K. Lindsey	Elmore City
N. H. Lindsey	Pauls Valley
H. P. Markham	Pauls Valley
Hugh H. Monroe	Lindsay
E. E. Norvell	Wynnewood
W. E. Rawls	Paoli
M. E. Robberson	Wynnewood
E. T. Robinson	Cleveland
W. E. Settle	Wynnewood
A. H. Shi	Stratford
C. L. Sullivan	Elmore City
J. W. Tucker	Lindsay
H. P. Wilson	Wynnewood

GRADY COUNTY

J. C. Ambrister	Chickasha
H. C. Antle	Chickasha
W. R. Barry	Alex
Walter Baze	Chickasha
Martha Bledsoe	Chickasha
W. L. Bonnell	Chickasha
U. C. Boone	Chickasha
H. A. Calvert	Chickasha
W. H. Cook	Chickasha
C. P. Cox	Ninnekah

E. L. Dawson	Chickasha
D. S. Downey	Chickasha
L. E. Emanuel	Chickasha
H. M. Evan	Rush Springs
J. W. Finley	Rush Springs
G. R. Gerard	Chickasha
P. J. Hampton	Rush Springs
A. E. Hennings	Tuttle
R. R. Hume	Minco
A. B. Leeds	Chickasha
J. S. Little	Tuttle
W. H. Livermore	Chickasha
A. W. Nunnery	Chickasha
Rebecca Mason	Chickasha
S. O. Marrs	Chickasha
H. C. Masters	Minco
G. M. McVey	Verden
C. P. Mitchell	Chickasha
J. F. Renegar	Tuttle
A. C. White	Chickasha

GRANT COUNTY

G. T. Drennan	Pond Creek
Abraham Hamilton	Manchester
I. V. Hardy	Manford
E. E. Lawson	Medford
J. F. Martin	Deer Creek
J. M. Tucker	Nash

GREER COUNTY

C. W. Austin	Mangum
G. F. Borden	Mangum
M. E. Chambers	Reed
E. E. Conner	Vinson
W. O. Dodson	Willow
H. W. Finley	McLain, Texas.
J. B. Hollis	Mangum
O. R. Jeter	Mangum
J. B. Lansden	Granite
J. T. Lowe	Mangum
F. H. McGregor	Mangum
J. S. Meredith	Duke
T. J. Nunnery	Granite
L. E. Pearson	Mangum
E. M. Poer	Mangum
J. G. Sharp	Granite
C. C. Shaw	Brinkman

HARMON COUNTY

W. G. Husband	Hollis
Roy L. Pendergast	304 Oliver-Eagle Bldg., Amarillo, Texas.
W. T. Ray	Gould

HASKELL COUNTY

John Davis	Stigler
A. T. Hill	Stigler
E. Johnson	Kinta
R. E. Jones	Stigler
R. F. Terrell	Stigler
T. B. Turner	Stigler
N. K. Williams	McCurtain

HUGHES COUNTY

W. D. Atkins	Holdenville
J. A. Bently	Allen
A. M. Butts	Holdenville
R. J. Crabill	Allen
A. L. Davenport	Holdenville
G. W. Diggs	Wetumka
T. B. Felix	Holdenville
W. E. Floyd	Holdenville
L. J. George	Stewart
S. H. Hamilton	Non
C. A. Hicks	Wetumka
W. F. Hooper	Holdenville

J. H. Kays	Holdenville
L. M. Lett	Dustin
C. C. Martin	Calvin
D. Y. McCary	Holdenville
J. D. McGovern	Wetumka
P. E. Mitchell	Wetumka
R. D. Morris	Stewart
J. F. Musser	Calvin
C. E. Parker	Dustin
G. W. Patterson	Wetumka
J. D. Scott	Holdenville
W. L. Taylor	Gertie
E. B. Thomason	Holdenville
G. H. Wallace	Holdenville
C. S. Wallace	Holdenville

JACKSON COUNTY

Edw. A. Abernathy	Altus
Roderick F. Brown	Altus
Emory S. Crow	Olustee
Raymond H. Fox	Altus
Joseph H. Hix	Altus
Earl W. Mabry	Altus
R. H. Mayes	Duke
L. H. McConnell	Altus
J. S. McFaddin	Altus
W. H. Price	Eldorado
John R. Reid	Altus
W. P. Rudell	Altus
C. G. Spears	Altus
D. O. Spencer	Headrick
H. R. Taylor	Blair
R. Z. Taylor	Concho
H. M. Westover	Martha

JEFFERSON COUNTY

W. M. Browning	Waurika
W. T. Andreskowski	Bryan
D. B. Collins	Waurika
J. I. Derr	Waurika
F. M. Edwards	Ringling
A. B. Holsted	Temple
C. M. Maupin	Terral
W. T. Nunn	Terral
A. T. Reed	Hastings
W. R. Strasner	Ryan
J. I. Taylor	Ringling
L. L. Wade	Ryan
J. W. Watson	Ryan

JOHNSON COUNTY

Guy Clark	Wapanucka
J. T. Looney	Tishomingo
C. B. Murphy	Mannsville

KAY COUNTY

W. O. Armstrong	Ponca City
C. W. Arrendell	Ponca City
C. J. Barker	Kaw City
J. H. Beatty	Tonkawa
G. L. Berry	Blackwell
C. L. Blanks	Ponca City
H. S. Browne	Ponca City
Merl Clift	Blackwell
Ira K. Cummings	Ponca City
T. W. Dunham	Three Sands
P. A. Edwards	Nardin
R. B. Gibson	Ponca City
A. O. Gowey	Newkirk
A. R. Hancock	Tonkawa
J. C. Hawkins	Blackwell
A. R. Havens	Blackwell
A. L. Hazen	Newkirk
Lawson Hughes	Tonkawa
J. A. Jones	Tonkawa

Allen C. Krammer	Ponca City
W. M. Leslie	Blackwell
W. P. Lipscomb	Ponca City
W. A. Lockwood	Ponca City
Allen Lowery	Blackwell
H. E. Marshall	Blackwell
E. O. Martin	Three Sands
Dewey Mathews	Tonkawa
Thos. McElroy	Ponca City
Geo. Melinder	Newkirk
D. W. Miller	Blackwell
J. W. Moore	Tonkawa
W. M. McClurkin	Ponca City
S. S. McCullough	Braman
Geo. H. Neiman	Ponca City
C. E. Northcutt	Ponca City
A. S. Nuckols	Ponca City
A. S. Risser	Blackwell
W. A. T. Robertson	Blackwell
R. C. Sigler	Braman
H. M. Strickland	Tonkawa
A. C. Syfert	Blackwell
E. E. Waggoner	Tonkawa
L. C. Vance	Ponca City
I. B. Walker	Blackwell
J. W. Werner	Newkirk
M. S. White	Blackwell
J. T. B. Widney	Kaw City
J. C. Woll	Tonkawa

KIOWA COUNTY

J. L. Adams	Hobart
J. D. Ballard	Mt. View
J. M. Bonham	Hobart
J. R. Bryce	Snyder
A. T. Dobson	Hobart
Melvin Gray	Mt. View
J. T. Hamilton	Snyder
A. H. Hathaway	Mt. View
J. A. Land	Hobart
H. C. Lloyd	Hobart
F. F. Martin	Roosevelt
E. P. Miles	Hobart
J. H. Moore	Hobart
Wm. McIlwain	Lone Wolf
J. A. Muller	Snyder
J. M. Ritter	Roosevelt
F. E. Walker	Lone Wolf
B. H. Watkins	Gotebo
J. D. Winter	Hobart

KINGFISHER COUNTY

E. R. Cavett	Loyal
A. Dixon	Hennessey
Chas. W. Fisk	Kingfisher
C. O. Gose	Hennessey
John W. Pendleton	Kingfisher
N. Rector	Hennessey
Frank Scott	Kingfisher
B. I. Townsend	Hennessey

LATIMER COUNTY

E. L. Evins	Wilburton
E. B. Hamilton	Wilburton
J. M. Harris	Wilburton
T. L. Henry	Wilburton
C. R. Morrison	Samoa, Cal.
R. L. Rich	Red Oak

LEFLORE COUNTY

S. C. Dean	Howe
J. B. Beckett	Spiro
G. O. Booth	LeFlore
E. L. Collins	Panama
E. N. Fair	Heavener

W. C. Gilliam	Spiro
J. T. Harbour	Cowlington
Harrell Hardy	Poteau
J. J. Hardy	Poteau
A. G. Hunt	Bokoshe
W. J. Hunt	Poteau
Bruce Inmon	Cowlington
L. D. Jones	Talihina
W. F. Lunsford	Poteau
R. W. Minor	Williams
A. M. Mixon	Spiro
R. M. Shepard	Talihina
Edgar E. Shippey	Wister
G. E. Watkins	Stapp
J. B. Wear	Poteau
Earl M. Woodson	Poteau
R. L. Wright	Talihina

LINCOLN COUNTY

N. C. Acree	General Delivery, Carney
J. W. Adams	Chandler
W. D. Baird	General Delivery, Stroud
F. C. Brown	Sparks
R. A. Brown	Prague
A. W. Coleman	Davenport
W. B. Davis	Tryon
W. H. Davis	Chandler
P. F. Erwin	Wellston
J. O. Glenn	Stroud
J. M. Hancock	Chandler
R. H. Hannah	Prague
A. W. Holland	Chandler
U. E. Nickell	Davenport
H. C. Iles	Prague
A. M. Marshall	Chandler
C. M. Morgan	Chandler
Levi Murray	Wellston
G. L. Wiles	Stroud

LOGAN COUNTY

C. B. Barker	Guthrie
E. O. Barker	Guthrie
Pauline Barker	Guthrie
J. O. Butler	Crescent
A. G. T. Childers	Mulhall
P. B. Gardner	Marshall
E. E. Goodrich	Crescent
Dan Gray	Guthrie
L. A. Hahn	Guthrie
C. B. Hill	Guthrie
W. H. Larkin	Guthrie
J. L. Melvin	Guthrie
Wm. C. Miller	Guthrie
C. S. Petty	Guthrie
L. H. Ritzhaupt	Guthrie
J. E. Souter	Guthrie
F. E. Trigg	Guthrie
A. A. West	Guthrie

MAJOR COUNTY

John V. Anderson	Fairview
Elsie Specht	Fairview

MARSHALL COUNTY

T. A. Blaylock	Madill
W. H. Ford	Kingston
John I. Gaston	Madill
W. D. Haynie	Kingston
J. L. Holland	Madill
O. E. Welborn	Kingston

MAYES COUNTY

Sylba Adams	Pryor
J. V. Blair	DeNoya
W. C. Bryant	Choteau

J. E. Hollingsworth Strang
 John D. Leonard Muskogee
 J. L. Mitchell Pryor
 B. L. Morrow Salina
 Carl Puckett Oklahoma City
 L. C. White Adair

McLAIN COUNTY

O. O. Dawson Wayne
 I. N. Kolb Blanchard
 W. C. McCurdy Purcell
 W. B. Slover Blanchard

McCURTAIN COUNTY

N. L. Barker Broken Bow
 A. W. Clarkson Valliant
 J. G. Hamilton Clebit
 W. G. Hancock Alikchi
 C. R. Huckabay Valliant
 E. A. Kelleam Garvin
 J. L. Mabry Valliant
 C. T. McDonald Idabel
 J. T. Moreland Idabel
 W. A. Moreland Idabel
 G. C. Mullins Broken Bow
 R. H. Sherrill Broken Bow
 W. D. Taylor Eabletown
 J. M. Thompson Broken Bow
 R. D. Williams Idabel
 W. D. Woods Golden

McINTOSH COUNTY

Dyton Bennett Texanna
 G. W. Graves Brownfield, Texas
 L. I. Jacobs Hanna
 N. P. Lee Checotah
 D. E. Little Eufaula
 J. H. McCulloch Checotah
 B. F. Rushing Hanna
 F. L. Smith Fame
 Wm. A. Tolleson Eufaula
 G. W. West Eufaula

MURRAY COUNTY

Paul V. Anadown Sulphur
 Howson C. Bailey Sulphur
 A. P. Brown Davis
 Byrum B. Brown Davis
 R. Dunn Davis
 J. C. Luster Sulphur
 P. S. Mitchell Sulphur
 W. H. Mytinger Sulphur
 W. H. Powell Sulphur
 A. S. Riddle Sulphur
 Geo. W. Slover Sulphur
 E. R. Vahlburg Sulphur
 J. T. Whorton Sulphur

MUSKOGEE COUNTY

J. R. Graves Boynton
 S. G. Hamm Haskell
 J. I. Hollingsworth Waurika
 W. R. Joblin Porter
 S. W. Minor Boynton
 W. E. Pearce Boynton
 T. T. Shackelford Haskell
 J. W. Sosbee Gore
 J. R. Waltrip Coweta

MUSKOGEE

H. T. Ballantine Surety Bldg.
 W. D. Berry Barnes Bldg.
 J. L. Blakemore Barnes Bldg.
 C. E. DeGroot Equity Bldg.
 R. N. Donnell Raymond Bldg.
 F. G. Dorwart Barnes Bldg.
 K. M. Dwight 808 North 'C'

Albert Earnest Barnes Bldg.
 A. W. Everly Equity Bldg.
 F. W. Ewing Surety Bldg.
 F. B. Fite Barnes Bldg.
 Edw. Halsell Fite 315 Barnes Bldg.
 W. P. Fite Barnes Bldg.
 S. J. Fryer Surety Bldg.
 C. M. Fullenwider Barnes Bldg.
 A. W. Harris Surety Bldg.
 James G. Harris Excg. Nat'l Bk. Bldg.
 Chas. W. Heitzman Barnes Bldg.
 Nowlin R. Holcombe Surety Bldg.
 Emma Starr Keith D and Dayton
 Forest S. King Surety Bldg.
 O. C. Klass Surety Bldg.
 Samuel E. Mitchell U.S.V.B. Hosp. 90
 A. L. Mobley U.S.V.B. Hosp. 90
 Chas. P. Murphy U.S.V.B. Hosp. 90
 Shade D. Neely Barnes Bldg.
 J. T. Nichols Equity Bldg.
 I. B. Oldham, Jr., 506 Surety Bldg.
 J. G. Rafter Metropolitan Bldg.
 John Reynolds Masonic Bldg.
 C. V. Rice Barnes Bldg.
 *H. C. Rogers Manhattan Bldg.
 H. A. Scott Manhattan Bldg.
 G. W. Stewart Surety Bldg.
 A. L. Stocks Barnes Bldg.
 C. A. Thompson Barnes Bldg.
 Milton K. Thompson Surety Bldg.
 W. T. Tilley Barnes Bldg.
 J. S. Vittum Barnes Bldg.
 F. L. Walton Surety Bldg.
 Floyd E. Warterfield Exch. Bldg.
 Chas. E. White Surety Bldg.
 J. Hutchings White Surety Bldg.
 Fred J. Wilkiemeyer Barnes Bldg.
 I. C. Wolfe Barnes Bldg.

NOBLE COUNTY

Robert A. Cavitt Morrison
 *Harry McQuown Red Rock
 B. A. Owen Perry
 T. F. Renfrow Billings
 L. D. Stewart Perry

NOWATA COUNTY

Edw. F. Collins Nowata
 John R. Collins Nowata
 Fred R. Dolson Nowata
 D. M. Lawson Nowata
 S. P. Roberts Alluwe
 M. B. Scott Delaware
 John P. Sudderth Nowata
 Geo. A. Waters Lenapah

OKFUSKEE COUNTY

A. C. Adams Weleetka
 C. M. Bloss Okemah
 C. C. Bombarger Paden
 M. O. Brice Okemah
 W. B. Carroll Okemah
 Chambers Weleetka
 C. M. Cochran Okemah
 W. C. Griffith Weleetka
 W. P. Jenkins Bearden
 J. A. Kennedy Okemah
 R. Keyes Okemah
 A. C. Lucas Castle
 J. L. Moyse Castle
 L. A. Nye Okemah
 J. R. Preston Weleetka
 T. R. Preston Weleetka
 J. M. Pemberton Okemah

*deceased.

J. C. Pitchford	Cromwell
J. S. Rollins	Paden
L. J. Spickard	Okemah
A. J. Stephenson	Okemah

OKLAHOMA COUNTY

T. H. Flesher	Edmond
Carl Haas	Harrah
Jas. I. Lyon	Edmond
E. T. Milligan	Geary
R. M. Ruhl	Edmond
S. N. Stone	Edmond

OKLAHOMA CITY

E. P. Allen	Medical Arts Bldg.
F. M. Bailey	Medical Arts Bldg.
W. H. Bailey	301 West 12th St.
R. M. Balyeat	M. A. Bldg.
C. E. Barker	M. A. Bldg.
C. E. Bates	M. A. Bldg.
C. N. Berry	M. A. Bldg.
M. R. Beyer	2006 W. 39th
J. G. Binkley	M. A. Bldg.
C. D. Blackley	M. A. Bldg.
Lucile Spire Blachly	State Capitol Bldg.
A. L. Blesh	301 W. 12th St.
Nathan Boggs	First Nat'l Bldg.
Floyd Bolend	M. A. Bldg.
Rex Bolend	M. A. Bldg.
C. P. Bondurant	M. A. Bldg.
Geo. L. Borecky	Colcord Bldg.
H. C. Bradley	Amer. Nat'l Bldg.
D. W. Branham	M. A. Bldg.
Thos. A. Buchanan	Amer. Nat'l Bldg.
Albert Cates	M. A. Bldg.
J. J. Caviness	M. A. Bldg.
A. B. Chase	Colcord Bldg.
H. H. Cloudman	M. A. Bldg.
Cyril E. Clymer	M. A. Bldg.
A. J. Coley	M. A. Bldg.
I. N. Cottle	2311 S. Harvey
P. H. Crawford	M. A. Bldg.
S. R. Cunningham	M. A. Bldg.
C. E. Davis	M. A. Bldg.
F. A. DeMand	Colcord Bldg.
Walter H. Dersch	Shops Bldg.
G. K. Dickson	M. A. Bldg.
W. E. Dixon	M. A. Bldg.
R. O. Early	M. A. Bldg.
E. G. Barnheart	M. A. Bldg.
W. E. Eastland	M. A. Bldg.
F. B. Erwin	M. A. Bldg.
J. B. Eskridge	M. A. Bldg.
E. S. Ferguson	M. A. Bldg.
C. J. Fishman	132 W. 4th
R. G. Fitz	Bethany
L. B. Foster	Liberty Bldg.
S. E. Frierson	M. A. Bldg.
W. Banks Fuller	Stockyards Bank Bldg.
Geo. Fulton	M. A. Bldg.
M. S. Gregory	M. A. Bldg.
John W. Gray	Huckins Estate Bldg.
E. Goldfain	Elks Bldg.
A. L. Guthrie	M. A. Bldg.
Clark H. Hall	Colcord Bldg.
J. E. Harbison	Colcord Bldg.
Paul E. Haskett	First Nat'l Bank Bldg.
J. A. Hatchett	M. A. Bldg.
B. A. Hayes	M. A. Bldg.
J. E. Heatley	M. A. Bldg.
F. B. Hicks	M. A. Bldg.
G. W. Hinchee	1415 W. 34th St.
A. C. Hirshfield	M. A. Bldg.
J. R. Holliday	M. A. Bldg.
R. M. Howard	M. A. Bldg.

C. A. Howell	First Nat'l Bk. Bldg.
J. J. Hoover	203 City Hall Bldg.
B. R. Hunter	M. A. Bldg.
Geo. Hunter	2248 W. 17th
Leon Janco	10 W. Park Place
W. J. Jolly	M. A. Bldg.
Hugh C. Jones	M. A. Bldg.
John F. Kelley	M. A. Bldg.
S. E. Kernodle	119 W. 5th
V. Kuchar	Shops Bldg.
Jno. F. Kuhn	M. A. Bldg.
E. S. Lain	M. A. Bldg.
Geo. A. LaMotte	Colcord Bldg.
Wm. Langsford	M. A. Bldg.
Wann Langston	University Hosp.
N. E. Lawson	M. A. Bldg.
C. E. Lee	Equity Bldg.
Elizabeth Lehmer	132 W. 4th
A. R. Lewis	Shops Bldg.
F. M. Lingenfelter	502 West "G"
LeRoy D. Long	M. A. Bldg.
Le Roy Long	M. A. Bldg.
Ross D. Long	M. A. Bldg.
T. R. Longmire	322½ N. Bdwy.
R. E. Looney	M. A. Bldg.
R. S. Love	M. A. Bldg.
Dick Lowry	M. A. Bldg.
Tom Lowry	M. A. Bldg.
R. S. MacCabe	First Nat'l Bldg.
J. C. MacDonald	301 W. 12th
E. Margo	717 N. Robinson
J. T. Martin	M. A. Bldg.
J. H. Maxwell	M. A. Bldg.
J. F. Messenbaugh	Colcord Bldg.
E. D. McBride	717 N. Robinson
J. P. McGee	M. A. Bldg.
D. D. McHenry	M. A. Bldg.
Lawrence C. McHenry	M. A. Bldg.
J. R. McLauchlin	M. A. Bldg.
P. M. McNeil	M. A. Bldg.
W. H. Miles	203 City Hall Bldg.
B. H. Moore	416 Colcord Bldg.
Ellis Moore	M. A. Bldg.
L. J. Moorman	M. A. Bldg.
M. V. Moth	Amer. Nat'l Bldg.
J. Z. Mraz	301 W. 12th
Ralph E. Myers	St. Anthony Hosp.
R. L. Murdock	M. A. Bldg.
E. R. Musick	M. A. Bldg.
L. A. Newton	M. A. Bldg.
N. R. Nowlin	Colcord Bldg.
E. E. Nunnery	Gen. Delivery
Kirt Parks	Terminal Bldg.
D. D. Paulus	M. A. Bldg.
Grider Penich	Colcord Bldg.
J. R. Phelan	Security Bldg.
A. S. Phelps	M. A. Bldg.
J. T. Phelps	M. A. Bldg.
J. S. Pine	M. A. Bldg.
J. M. Postelle	947 W. 13th
C. M. Pounders	210 W. 10th
Jno. A. Rock	Colcord Bldg.
Horrace Reed	M. A. Bldg.
Ruth S. Reichmann	M. A. Bldg.
Lea A. Riely	M. A. Bldg.
H. C. Ricks	Box 1237
J. W. Riley	119 W. 5th
J. H. Robinson	301 W. 12th
J. A. Roddy	116 W. 5th
M. M. Roland	M. A. Bldg.
J. B. Rolater	Shops Bldg.
F. E. Rosenberger	M. A. Bldg.
W. W. Rucks	301 W. 12th
R. E. Runkle	M. A. Bldg.

L. M. Sackett	Amer. Nat'l Bldg.
A. L. Salmon	M. A. Bldg.
A. J. Sands	Amer. Nat'l Bldg.
Fenton M. Sanger	Cotton Exch. Bldg.
Winnie Sanger	Cotton Exch. Bldg.
H. V. L. Sapper	M. A. Bldg.
J. B. Shannon	217 Liberty Bldg.
Fred C. Sheets	Tradesmen's Nat'l Bldg.
M. Smith	Colcord Bldg.
L. J. Starry	M. A. Bldg.
M. E. Stout	M. A. Bldg.
S. E. Strader	Amer. Nat'l Bldg.
S. P. Strother	M. A. Bldg.
Earnest Sullivan	M. A. Bldg.
Elijah S. Sullivan	M. A. Bldg.
Geo. R. Tabor	Amer. Nat'l Bldg.
C. B. Taylor	M. A. Bldg.
Wm. Taylor	First Nat'l Bldg.
H. Coulter Todd	Colcord Bldg.
C. W. Townsend	M. A. Bldg.
H. H. Turner	M. A. Bldg.
E. L. Underwood	First Nat'l Bk. Bldg.
Curt von Wedel	Colcord Bldg.
T. G. Walls	M. A. Bldg.
W. J. Wallace	M. A. Bldg.
J. C. Warmack	Colcord Bldg.
Marshall W. Weir	Colcord Bldg.
W. W. Wells	M. A. Bldg.
W. K. West	Terminal Bldg.
L. M. Westfall	M. A. Bldg.
M. MacCullagh Wickham	M. A. Bldg.
S. F. Wildman	M. A. Bldg.
H. M. Williams	M. A. Bldg.
W. H. Williamson	Shops Bldg.
E. C. Wilson	M. A. Bldg.
K. J. Wilson	M. A. Bldg.
A. W. White	M. A. Bldg.
Oscar White	Colcord Bldg.
A. D. Young	M. A. Bldg.
A. M. Young	Colcord Bldg.
James A. Young	1007 West 23rd.
E. L. Yeakel	M. A. Bldg.

OKMULGEE COUNTY

Lin Alexander	Okmulgee
R. M. Alexander	Bryant
John E. Bercaw	Okmulgee
Axel J. Black	Okmulgee
H. D. Boswell	Henryetta
I. W. Bollinger	Henryetta
C. E. Byram	Okmulgee
T. C. Carloss	Morris
C. H. Cooke	Beggs
*A. H. Culp	Beggs
M. D. Carnell	Okmulgee
W. M. Cott	Okmulgee
J. G. Edwards	Okmulgee
J. B. Ferguson	Okmulgee
M. B. Glismann	Okmulgee
O. O. Hammonds	Okmulgee
A. R. Holmes	Henryetta
F. H. Hollingsworth	Henryetta
A. G. Hughey	Dewar
W. S. Hudson	Okmulgee
F. A. Howell	Okmulgee
W. W. Hicks	Okmulgee
G. A. Kilpatrick	Henryetta
James O. Lowe	Okmulgee
Thos. J. Lynch	Okmulgee
J. C. Matheny	Okmulgee
J. A. Milroy	Okmulgee
G. Y. McKinney	Henryetta
R. Mooney	Henryetta

*deceased.

W. C. Mitchener	Okmulgee
C. M. Ming	Okmulgee
J. P. Nelson	Shulter
J. L. Miner	Beggs
J. H. Powell	Kusa
H. L. Rains	Okmulgee
D. M. Randel	Okmulgee
Harvey O. Randel	Okmulgee
J. C. Rembert	Okmulgee
Chas. A. Reese	Okmulgee
J. C. Robinson	Henryetta
Ed. Rodda	Okmulgee
I. W. Robertson	Okmulgee
W. W. Stark	Okmulgee
W. C. Sanderson	Henryetta
T. H. Shelton	Okmulgee
N. N. Simpson	Henryetta
F. E. Sadler	Henryetta
L. B. Torrance	Okmulgee
W. C. Vernon	Okmulgee
V. Wallace	Morris
W. S. Watson	Okmulgee
Fred S. Watson	Okmulgee
J. O. Walls	Okmulgee
L. B. Windham	Okmulgee
R. L. Westover	Okmulgee
Eva Wells	

OSAGE COUNTY

W. H. Aaron	Pawhuska
E. T. Alexander	Barnsdall
J. V. Blair	DeNoya
R. J. Barritt	Pawhuska
W. W. Chase	Barnsdall
T. J. Colley	Hominy
C. H. Day	Pawhuska
B. E. Dozier	Lyman
Herman Fagan	Osage
F. R. First	Wynona
Jas. J. Fraley	Hominy
G. J. Garrison	Fairfax
G. W. Goss	Pawhuska
T. P. Govan	Pawhuska
O. R. Gregg	Pawhuska
C. H. Guild	Apperson
J. T. Gunter	Barnsdall
F. F. Jones	Pawhuska
E. C. Keys	Shidler
E. N. Lipe	Fairfax
C. K. Logan	Hominy
H. B. McFarland	Cleveland
Q. B. Neale	Pawhuska
A. S. Price	209 East 23rd., New York
J. M. Reed	Fairfax
H. M. Reeder	Webb City
M. E. Rust	Pawhuska
J. G. Shoun	Fairfax
A. J. Smith	Pawhuska
L. L. Smith	Avant
G. E. Stanbro	Pawhuska
B. F. Sullivan	Barnsdall
H. L. Summers	204 Public Sq., Marion, Ill
G. I. Walker	Hominy
Roscoe Walker	Pawhuska
L. C. Williams	Pawhuska
C. W. Williams	Pawhuska
Divonis Worten	Pawhuska

OTTAWA COUNTY

E. Albert Aisenstadt	Picher
J. O. Bradshaw	Welch
V. V. Butler	Picher
R. F. Cannon	Miami
G. W. Colvert	Miami

D. P. Connell	Picher
A. M. Cooter	Miami
J. W. Craig	Miami
M. M. DeArman	Miami
Burleigh DeTar	Miami
Geo. DeTar	Miami
W. M. Dolan	Picher
J. B. Hampton	Commerce
R. H. Harper	Afton
J. C. Jacobs	Miami
J. S. Jacoby	Commerce
J. M. Lanning	Picher
E. A. Leisure	P. O. Box No. 22, Slater, Mo
J. B. Lightfoot	Miami
E. D. Mabry	Hockerville
Chas. McCallum	Quapaw
Chas. McLelland	Miami
G. P. McNaughton	Miami
H. K. Miller	Fairland
F. M. O'Kelley	Picher
I. Phillips	Picher
General Pinnell	Miami
B. W. Ralston	Cardin
Russell Richard	Picher
W. A. Sibley	Cardin
Ira Smith	Commerce
W. B. Smith	Miami
L. W. Trout	Afton
G. O. Webb	Cardin
J. P. Williams	Picher
M. P. Willis	Commerce
F. L. Wormington	Miami

PAWNEE COUNTY

C. W. Ballaine	Cleveland
C. A. Beeler	Pawnee
C. E. Beitman	Skedee
E. T. Robinson	Cleveland
J. A. Roberts	Cleveland

PAYNE COUNTY

J. E. Adams	Cushing
C. H. Beach	Glenco
I. A. Briggs	Stillwater
J. H. Cash	Stillwater
L. A. Cleverdon	Stillwater
W. N. Davidson	Cushing
Benj. Davis	Cushing
G. H. Gillen	Cushing
E. M. Harris	Cushing
J. Herrington	Cushing
R. W. Holbrock	Perkins
W. B. Hudson	Yale
T. A. Love	Ripley
H. C. Manning	Cushing
J. A. Martin	Cushing
L. A. Mitchell	Stillwater
H. M. Prentiss	Yale
P. M. Richardson	Cushing
C. E. Sexton	Stillwater
Roy E. Wagoner	Stillwater
Ralph E. Weller	Electra, Texas
L. R. Wilhite	Perkins

PITTSBURG COUNTY

F. J. Baum	McAlester
V. H. Barton	McAlester
J. B. Bright	Kiowa
R. L. Browning	Hartshorne
C. J. Brunson	McAlester
A. D. Bunn	Savanna
H. N. Bussey	Pittsburg
A. E. Carlock	Hartshorne
T. S. Chapman	McAlester

W. A. Daniels	No. McAlester
J. E. Davis	McAlester
Joe Dorrough	Hartshorne
J. W. Echols	McAlester
A. Griffith	McAlester
J. O. Grubbs	No. McAlester
W. P. Hailey	Haileyville
Chas. T. Harris	Kiowa
W. K. Hudson	Hartshorne
J. C. Johnston	McAlester
G. A. Kilpatrick	McAlester
L. C. Kuykendall	McAlester
W. P. Lewallen	Canadian
T. H. McCarley	McAlester
J. A. Munn	McAlester
T. T. Norris	Krebs
J. F. Park	McAlester
Chas. M. Pearce	McAlester
R. K. Pemberton	McAlester
W. G. Ramsay	Quinton
O. W. Rice	McAlester
W. W. Sames	Hartshorne
J. C. Schlicht	No. McAlester
H. D. Shankle	Hartshorne
Earnest Thomas	Quinton
W. C. Wait	McAlester
F. L. Watson	McAlester
A. J. Welch	McAlester
McClellan Wilson	McAlester
Clyde O. Williams	McAlester
L. S. Willour	McAlester

PONTOTOC COUNTY

N. B. Breckenridge	Laredo, Texas
J. G. Breco	Ada
Catherine T. Brydia	Ada
S. L. Burns	Maxwell
R. T. Castleberry	Ada
J. R. Craig	Ada
Isham I. Cummings	Ada
B. B. Dawson	Ada
W. D. Faust	Ada
T. Fuller	129½ W. Grand Ave., Oklahoma City
T. B. Hamer	Roff
J. L. Jeffress	Ada
R. F. King	Ada
Wilson H. Lane	Ada
E. F. Lewis	Ada
M. L. Lewis	Ada
Sam L. McKeel	Ada
M. C. McNew	Ada
Oscar H. Miller	Ada
C. F. Needham	Ada
S. P. Ross	Ada
J. A. Rutledge	Ada
Alfred R. Sugg	Ada
W. R. Trelkeld	Ada
W. M. Webster	Ada

POTTAWATOMIE COUNTY

Robt. Morrison Anderson	Shawnee
Gardner H. Applewhite	Shawnee
W. A. Ball	Wanette
McKenzie A. Baker	Shawnee
Geo. S. Baxter	Shawnee
Walter G. Bradford	Shawnee
James M. Byrum	Shawnee
Hiram G. Campbell	Seminole
F. LeRoy Carson	Shawnee
G. R. Connelley	Tribbey
U. S. Cordell	Macomb
Roland R. Culbertson	Maud
J. E. Cullum	Earlsboro
Wm. A. Fey	Shawnee

J. L. Fortson	Tecumseh
Wm. Marshall Gallaher	Shawnee
E. J. Gray	Tecumseh
John Elmer Hughes	Shawnee
R. C. Kaylor	McLoud
J. W. Marshall	Shawnee
Wm. S. Martin	Wewoka
Alonzo C. McFarling	Shawnee
D. D. Mosher	Seminole
J. B. Reynolds	Seminole
Edgar E. Rice	Shawnee
Edgar Eugene Rice	Shawnee
Tazwell D. Rowland	Shawnee
J. E. Royster	Wanette
T. Clay Sanders	Shawnee
John Hugh Scott	Shawnee
Jacob M. Stooksbury	Shawnee
James H. Turner	Kings Co. Hosp., Brooklyn New York
Howard A. Wagner	Shawnee
John A. Walker	Shawnee
Joseph E. Walker	Shawnee
A. J. Williams	McLoud
Alph McAdams Williams	Shawnee

PUSHMATAHA COUNTY

Ernest Ball	Sulphur
J. A. Burnett	Dunbar
B. M. Huckabay	Antlers
H. C. Johnson	Antlers
J. C. Lawson	Clayton
E. S. Patterson	Antlers

ROGER MILLS COUNTY

B. M. Ballenger	Strong City
W. S. Cary	Rankin
J. N. Cross	Cheyenne

ROGERS COUNTY

F. A. Anderson	Claremore
A. M. Arnold	Claremore
Caroline Bassman	Claremore
J. C. Bushyhead	Claremore
W. F. Hays	Claremore
W. A. Howard	Chelsea
K. D. Jennings	Chelsea
W. S. Mason	Claremore
Melvin T. Means	Washington D. C., U. S. A
R. C. Meloy	Claremore
W. P. Mills	Claremore
J. C. Smith	Catoosa
J. M. Stemmons	Collinsville
J. C. Taylor	Chelsea

SEMINOLE COUNTY

C. W. Bates	Seminole
A. V. Coffey	Wewoka
M. Pinson	Wewoka
Guy B. Van Sandt	Wewoka

SEQUOYAH COUNTY

J. A. Cheek	Sallisaw
E. P. Greene	Sallisaw
S. B. Jones	Sallisaw
J. A. Morrow	Sallisaw
J. C. Rumley	Vian
T. F. Wood	Sallisaw

STEPHENS COUNTY

J. R. Brewer	Comanche
J. P. Bartley	Duncan
B. H. Burnett	Duncan
C. T. Caraker	Duncan
J. B. Carmichael	Duncan
M. M. Carmichael	Duncan

C. P. Chumley	Duncan
S. S. Garrett	Loco
G. O. Hall	Duncan
P. B. Hall	Marlow
C. M. Harrison	Comanche
W. S. Ivy	Duncan
F. M. Johnson	Loco
J. H. Linzy	Comanche
D. Long	Duncan
*A. R. Mavity	Marlow
A. M. McMahan	Duncan
J. A. Mullin	Marlow
J. W. Niewig	Duncan
L. M. Overton	Duncan
J. D. Pate	Duncan
J. L. Patterson	Duncan
S. A. Rice	Velma
R. L. Russell	Marlow
C. N. Talley	Marlow
A. J. Weedn	Duncan
S. H. Williamson	Duncan

TEXAS COUNTY

R. B. Hayes	Guymon
Wm. H. Langston	Guymon
Daniel S. Lee	Guymon
Wm. J. Risen	Hooker

TILLMAN COUNTY

C. Curtis Allen	Frederick
J. E. Arrington	Frederick
O. G. Bacon	Frederick
J. E. Childers	Tipton
J. W. Collier	Tipton
G. A. Comp	Manitou
Roy Fisher	Frederick
W. C. Fosehee	Grandfield
*W. A. Fuqua	Grandfield
H. C. Harris	Grandfield
A. J. Hays	Frederick
M. M. Mackeller	Loveland
F. G. Priestley	Frederick
J. D. Osborn, Jr.	Frederick
J. C. Reynolds	Frederick
T. F. Spurgeon	Frederick
R. E. Wilson	Frederick
Harper Wright	Grandfield

TULSA COUNTY

Y. R. Allison	Sand Springs
Chas E. Calhoun	Sand Springs
L. H. Carleton, Henry Ford Hosp.,	Detroit, Mich
B. J. David	Sand Springs
Herman Fagin	Skiatook
R. C. Farris	West Tulsa
M. J. Ferguson 5 de Mayo No. 5	Despacho No. 4 Mexico D. F
Onis Franklin	Broken Bow
Bennett Graff	Red Fork
F. S. Halm	Sand Springs
V. D. Harrington	Keystone
B. Harris	Jenks
H. L. Hille	Collinsville
B. H. Humphrey	Snyder
A. Hutchinson	Bixby
J. H. Laws	Broken Bow
B. W. McLean	Jenks
John C. Perry	Sand Springs
A. W. Scheonleber	26 Broadway, New York
H. P. Ward	Leonard
F. M. Wilks	Collinsville
C. W. Young	Cleveland

*deceased.

TULSA

V. K. Allen	Palace Bldg
C. M. Ament	Ritz Bldg
Walter L. Anders	Daniels Bldg
J. R. Anderson	Commerce Bldg
R. Q. Atchley	Palace Bldg
Paul N. Anthis	Wright Bldg
J. H. Barham	Daniels Bldg
D. A. Beard	Palace Bldg
W. W. Beesley	411½ S. Main
Walter J. Beyer	Palace Bldg
J. J. Billington	Mayo Bldg
J. Fred Bolton	Atlas Life Bldg
Fred M. Boso	Daniels Bldg
C. E. Bradley	116 West Fourth
James C. Braswell	Mayo Bldg
Harry E. Breese	1216 S. Frankfort
J. C. Broegen	Mayo Bldg
J. E. Brookshire	Robinson Bldg
Henry S. Browne	Palace Bldg
W. J. Bryan	Palace Bldg
James M. Buchanan	1916 S. Phoenix
J. P. Butcher	Robinson Bldg
Hubert W. Callahan	Palace Bldg
Pierre N. Charbonnet	Wright Bldg
H. C. Childs	Mayo Bldg
J. W. Childs	Mayo Bldg
Fred S. Clinton	Palace Bldg
Geo. H. Clulow	Masonic Temple
E. L. Cohenour	Bliss Bldg
W. Albert Cook	Palace Bldg
T. B. Coulter	411½ S. Main
Fred Y. Cronk	Daniels Bldg
W. A. Dean	Masonic Temple
Nevin J. Dieffenbach	708 S. Cincinnati
T. R. Davis	Oklahoma Hospital
C. A. Dillon	Daniels Bldg
Roy W. Dunlap	Palace Bldg
A. V. Emmerson	Atlas Life Bldg
Hugh J. Evans	123 West 3rd St.
H. Lee Farris	Oklahoma Hospital
R. A. Felt	Ritz Bldg
O. A. Flannigan	411½ So. Main
Geo. W. Flinn	44 No. Yorktown
H. W. Ford	Security Bldg.
G. Garbedian	615 So. Cheyenne
D. L. Garrett	604 So. Cincinnati
Paul C. Geissler	2224 So. St. Louis
J. B. Gilbert	Central Natl Bk Bldg
Fred A. Glass	Mayo Bldg
Samuel Goodman	Roberts Bldg
J. Franklin Gorrell	Security Bldg
H. C. Graham	615 S. Cheyenne
Harry Green	Atlas Life Bldg
Ross Grosshart	Wright Bldg
Harry Haas	Ritz Bldg
Chas. H. Haralson	Wright Bldg
T. A. Hartgraves	Atlas Life Bldg
G. E. Hartshorne	Daniels Bldg
Thos. M. Haskins	102½ West 3rd
E. A. Hawks	113½ S. Main
S. DeZell Hawley	417 West 6th
C. T. Hendershot	Orpheum Bldg
F. W. Henderson	102½ East 3rd
Marvin D. Henley	Palace Bldg
C. C. Hoke	Petroleum Bldg
J. S. Hooper	Security Bk Bldg
M. A. Houser	Security Bldg
W. A. Huber	Daniels Bldg
L. T. Jackson	212½ S. Main
Chas. D. Johnson	Atlas Life Bldg
H. B. Justice	Security Bldg
M. C. Kimbal	110½ West 4th

S. H. Kimmons	725 So. Cincinnati
Phillip Kline	220 Wright Bldg
W. S. Larrabee	St. John's Hospital
J. K. Lee	Atlas Life Bldg
Wm. G. Lemmon	Daniels Bldg
M. Lhevine	1412 So. Newport
C. P. Linn	Palace Bldg
D. M. MacDonald	114 East 6th
P. A. Mangan	Mayo Bldg
Bertha M. Margolin	456 Riverside Drive
D. W. Lee Master	Palace Bldg
P. H. Mayginnnes	Palace Bldg
W. F. McAnnaly	Carter Oil Co
L. A. McComb	Daniels Bldg
Ralph McGill	Security Bldg
Malcom McKellar	604 So. Cincinnati
Geo. H. Miller	Atlas Life Bldg
Silas S. Mohrman	Palace Bldg.
H. D. Murdock	Wright Lab. Bldg
P. G. Murray	Daniels Bldg
S. Murray	411½ S. Main
F. C. Myers	203 Roberts Bldg
J. J. Nabhan	Commerce Bank Bldg
J. H. Neal	301 Roberts Bldg
F. L. Nelson	Daniels Bldg
E. P. Nesbit	Palace Bldg
P. P. Nesbit	Palace Bldg
Geo. R. Norman	2543 East Admiral
L. C. Northrup	Masonic Temple
C. D. F. O'Hern	Daniels Bldg
Geo. H. Osborn	Daniels Bldg
J. C. Peden	Security Natl Bldg
J. T. Perry	Bliss Bldg
M. L. Perry	Bliss Bldg
A. W. Pigford	Palace Bldg
L. C. Presson	Palace Bldg
H. P. Price	Commerce Bk Bldg
Horace T. Price	Security Natl Bldg
K. C. Reese	604 So. Cinn
J. L. Reynolds	Mayo Bldg
J. M. Reynolds	Atlas Life Bldg
R. L. Rhodes	Daniels Bldg
S. M. Richey	1702 S. Quannah
T. R. Roberts	2647 W. 7th
J. W. Rogers	Natl Bldg
W. H. Rogers	Daniels Bldg
A. W. Roth	Security Bk Bldg
F. E. Rushing	Daniels Bldg
M. E. Sippell	1419 S. Troost
W. H. Sisler	Palace Bldg
S. C. Shepard	Roberts Bldg
R. G. Sherwood	Masonic Temple
D. O. Smith	604 So. Cinn
R. R. Smith	Clinton Bldg
R. V. Smith	Security Natl Bldg
Ruric N. Smith	Palace Bldg
M. P. Springer	604 So. Cinn
T. W. Stallings	114 W. Fourth
James Stevenson	Orpheum Bldg
Leon H. Stuart	604 So. Cinn
C. S. Summers	Daniels Bldg
J. W. Trainor	Masonic Temple
I. N. Tucker	Daniels Bldg
V. L. Turrill	103½ E. 3rd
F. L. Underwood	Palace Bldg
S. C. Venable	Commerce Bk Bldg
A. G. Wainwright	Security Bank Bldg
J. E. Wallace	Ritz Bldg
G. A. Wall	Palace Bldg
L. G. Washington	Wright Bldg
F. L. Watkins	Board of Education
J. E. Webb	206½ S. Main

A. Ray Wiley Mayo Bldg
 Daniel W. White Roberts Bldg
 N. S. White Mayo Bldg
 Peter Cope White Roberts Bldg
 C. J. Woods Knowlock Woods Bldg

WAGONER COUNTY

S. R. Bates Wagoner
 Isabel Cobb Howe
 C. W. Hayward Wagoner
 J. T. Moon Wagoner
 J. H. Plunckett Wagoner

WASHINGTON COUNTY

J. V. Athey Bartlesville
 E. E. Beechwood Bartlesville
 S. J. Bradfield Orpheum Bldg
 E. M. Chamberlin Bartlesville
 T. O. Crawford Dewey
 G. V. Dorscheimer Dewey
 F. S. Etter Bartlesville
 O. I. Green Bartlesville
 U. G. Hall Copan
 L. D. Hudson Dewey
 W. H. Kingman Bartlesville
 L. D. Kiser Bartlesville
 Wm. LeBlanc Ochelata
 N. D. Miller, 333 East 30th St., New York City
 S. M. Parks Bartlesville
 W. E. Rammel, 3172 India St., San Diego, Calif.
 W. H. Shipman Bartlesville
 J. G. Smith Bartlesville
 O. S. Somerville Bartlesville
 B. F. Staver Bartlesville
 C. K. Tillison Ramona
 J. P. Torrey Bartlesville
 J. P. Vansant Dewey
 H. C. Weber Bartlesville
 C. J. Wells Bartlesville
 G. F. Woodring Bartlesville

WASHITA COUNTY

B. W. Baker Cordell
 D. W. Bennett Sentinel
 A. H. Bungardt Cordell
 C. Doler Foss
 J. E. Farber Cordell
 I. S. Freeman Rockey
 J. H. Harms Cordell
 J. P. Jones Sentinel
 A. S. Neal Cordell
 A. M. Sherburne Cordell
 A. A. Stoll Foss
 C. B. Sullivan Colony

C. M. Tracy Sentinel
 E. S. Weaver Dill
 A. Webber Bessie

WOODS COUNTY

Howard Banks Ames Alva
 Geo. N. Bilby Alva
 James Abraham Bowling Alva
 Ebenezer P. Clapper Waynoka
 Daniel Boy Ensor Hopeton
 Elizabeth Grantham Alva
 Arthur Ernest Hale Alva
 Ray Lormer Hall Waynoka
 John E. Hammer Kiowa, Kas
 Isaac S. Hunt Freedom
 L. S. Munsell Beaver
 Chas. L. Rogers Dacoma
 Benj. W. Saffold Freedom
 Wm. Ebert Simon Alva
 Wm. H. Smedley Capron
 Oscar E. Templin Alva
 Geo. R. White Kiowa, Kas

WOODWARD COUNTY

E. L. Bagby Supply
 Wm. Bamber Arnett
 J. J. Barber Laverne
 A. J. Brace Vici
 G. W. Buckmaster Beaver
 E. F. Camp Buffalo
 H. S. Cockrill Mooreland
 T. E. Dixon Woodward
 J. C. Duncan Forgan
 R. L. Edmonds Fargo
 C. J. Forney Woodward
 H. B. Hall Mutual
 C. E. Houser May
 H. K. Hill Follette, Texas
 G. E. Irvin Gage
 T. C. Leachman Woodward
 E. W. Newport Seiling
 O. C. Newman Shattuck
 F. L. Patterson Woodward
 O. A. Pierson Woodward
 W. L. Rose Woodward
 C. R. Silverthorne Woodward
 O. H. Stultz Supply
 T. B. Triplett Mooreland
 D. W. Vincent Woodward
 H. Walker Rosston
 D. Watts LaVerne
 C. E. Williams Woodward
 J. C. Whitacker 31 Parkway Ave., Memphis, Tenn
 R. A. Workman Box 529, Pacific Grove, Cal.



OFFICERS OF COUNTY SOCIETIES, 1927

County	President	Secretary
Adair.....	R. L. Sellers, Westville.	Jas. A. Patton, Stilwell
Alfalfa.....		
Atoka—Coal.....	C. C. Gardner, Atoka.	Lemuel E. Gee, Stringtown.
Beckham.....	H. K. Speed, Sayre.	G. H. Stagner, Erick.
Blaine.....	Geo. M. Holcombe, Okeene.	W. F. Griffin, Watonga.
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PELLAGRA*

FELIX M. ADAMS, M.D.
VINITA

Although pellagra has long been prevalent in Italy, Spain, Austria, Roumania and other European countries, no large number of cases were reported in the United States until 1907 and 1908, however, it is likely many cases occurred but were not properly diagnosed. History given by survivors of the Libby and Andersonville prisons lead us to believe that many of these men were suffering from pellagra.

In November, 1909, the first conference on pellagra was held in Columbia, S. C., as many cases were being reported in the southern states and the physicians began to realize the danger from the ravages of this disease. In Oklahoma pellagra was very prevalent during the years 1910 to 1914. During the war period the number of cases decreased materially, in fact, during the years 1916 to 1920, we received very few cases in our State institutions and a very small number was reported to the health authorities. Since 1920 there has been a gradual increase in the number of cases and in the last three years the increase has been alarming. During the year 1925, there was reported to the State Board of Health, 313 cases, with 117 deaths. On account of the large number of deaths I am sure only a small per cent of the cases were reported. For the year 1926, 543 cases were reported, with 242 deaths. Again we find the death rate extremely high for the number of cases reported. In the fall of 1926, Dr. Joseph Goldberger, of the U. S. Public Health Department, made a visit to Oklahoma to investigate the rapid increase of pellagra here and he estimated that we have no less than 5000 pellagrins in this State, and I am convinced his figures are conservative.

Much has been written on the etiology of pellagra and as many different causes have been advanced as there have been remedies for its treatment. The work of the early investigators have been only assumed and none of them have been proven in a scientific manner. The theory that held sway in Europe for many years that pellagra was caused by spoiled corn and maize, held the center of the stage for some time. One group of investigators thought that under the influence of parasitic growths, bacteria or molds, the maize undergoes certain changes with the formation of one or more toxic substances of a chemical nature, that caused the disease. The other held that the toxic substances are formed within the body from the spoiled grain. So sure that this was the cause of pellagra much legislation was passed in European countries to prohibit the sale of spoiled maize or corn, but this had no influence on the spread of the disease. Following the spoiled maize theory came the Sambon theory that Pellagra was a protozoan disease and that it was transmitted by the sand-fly. His theory of its transmission was based on the topographical distribution of pellagra in Italy, where the pellagra foci were along streams infected by the fly; that the outbreaks of the disease in the Spring and Fall correspond to the active period of the fly. This theory was supported by some authorities in the United States, as they found in certain states evidence of the sand-fly's activities. Other early investigators suggested the theory of intoxication—that pellagra is an acidosis due to silica in a colloidal state found in the drinking water in pellagrous districts. The authorities claimed that pellagra was found exclusively in those districts where the drinking water was derived from or came in contact with clay, and hence carried silica in solution.

In the United States the Thomson-McFadden Commission appointed by the State of Illinois, reported that pellagra was an infectious disease and in some way transmissible from person to person, the particular mode of transmission of the dis-

*Read before the Section on General Medicine, Neurology, Pathology and Bacteriology, Annual Meeting, Oklahoma State Medical Association, Muskogee, May, 1927.

ease was not given although they thought the infective agent to be located in the digestive tract and might be transmitted by the contamination of food. This theory, like many others that were advanced about this time, not being based on scientific facts, was short lived.

The first real scientific work on pellagra was carried out by Dr. Joseph Goldberger and associates, of the U. S. Public Health Service. They made a careful dietary study in several institutions in the south where pellagra was prevalent. These investigations led to the conclusion that pellagra is not due to any one foodstuff, such as maize or corn meal, but to a deficient diet in which there is an excess of carbohydrate foods, especially cereal foods and a low proportion of protein. Working along these lines Dr. Goldberger has contributed from year to year some very valuable data on the etiology and treatment of Pellagra. In a recent article he states—

"The results of certain of the studies of pellagra prevention published early in 1925, indicated that, while a protein of improved biological quality seemed to possess some favorably modifying effect, an additional, theretofore unrecognized or unappreciated, factor was needed completely to prevent the disease. There was reason to think too, that this new factor, which for convenience was designated P-P, might be effective with but little, possibly without any, cooperation from the protein. The results of a still more recently reported study, which concerned itself mainly with fresh beef and dried aqueous extract of yeast, seem to support that interpretation and to increase the probability that factor P-P plays the sole essential role in the prevention of pellagra. In the same report a preliminary statement was made of some of the results of an experimental study of the Chittenden-Underhill pellagralike syndrome in dogs (black tongue), and it was noted that the substances that had been found to possess black-tongue-preventative potency had, when tried in pellagra, been found efficient preventatives of the human disease, and, conversely, that the substances that had failed in pellagra, or were of low pellagra-preventative potency, when tried in black tongue had failed or were feeble as preventative of the canine disease. In view of this striking similarity it seems very probable and, therefore, the working hypothesis has been adopted, that black tongue of dogs is the analogue of pellagra in man and, thus, that factor P-P

is the factor concerned in the prevention and causation of both pellagra and black tongue.

The evidence of the existence of a factor P-P resulting from the studies of the human and of the canine disease is confirmed or, at least, the existence of a closely associated factor indicated by evidence yielded by certain feeding experiments which we have carried out in rats."

From the above we can see that Goldberger feels that other factors enter into the cause of pellagra besides the lack of a properly balanced diet and deficient proteids.

I will not take your time to go into a discussion of the clinical symptoms of pellagra for I am sure they are familiar to all present, but I wish to call your attention, especially, at this time of year, to a few symptoms in the beginning cases so that they may be diagnosed early and a great deal gained in the treatment. Symptoms as loss of appetite, indigestion, pain in the stomach, anorexia—seldom vomiting, change in personality, uneasy feeling, insomnia, fear of impending danger—often a diagnosis of neurasthenia is made from these symptoms—should be watched very closely for pellagra, especially, if they occur during the months of May and June, in a pellagrous district.

In the treatment of pellagra the general hygienic treatment is of great importance—plenty of fresh air, rest with quiet and pleasing surroundings, regularity in daily habits and frequent baths. The mouth should be washed often with an antiseptic solution and the teeth brushed after each feeding. The care of the skin in severe cases is a serious problem as the eruption is very irritating to the patient. Many cases can be relieved by applying wet towels to the affected area. A wash of lysol or potassium permanganate should be used night and morning, often an ointment as vasaline or zinc oxide will give relief from the pain and irritation.

The diet should consist of highly nutritious foods. Meats, as a rule, agree with pellagrins and should form an important part in the diet, especially, beef steaks and beef extracts. Milk and eggs should also be given at least twice a day. Beans, garden peas, black-eyed peas, spinach and, in fact, most garden vegetables. Fresh tomatoes in season should be given often and when the fresh tomatoes are not available the juice of canned tomatoes may be substituted.

Drugs are used in pellagra only to treat the general symptoms, as occasion arises, and we have found no particular drug that has any influence on the disease. We gave the different arsenic preparations a thorough trial and feel that they are of no special benefit in the treatment. During the past year we have been using one of the digestive ferments that aids in digesting the proteids as it acts in the presence of either an alkaline, acid or neutral media.

With this balanced diet the patient should be given two ounces of dry brewer's yeast each day. This may be mixed in the milk or be given with other foods and is usually well borne by the patients. We have been treating all of our patients with yeast for the past year and the results have been very gratifying. I think it is a very advanced step in the treatment of this disease.

Dr. Goldberger feels that dried yeast contains the pellagra preventative factor or the vitamine that is deficient in the diet of these patients. We receive in the State institutions the more advanced cases and our results in the most serious cases have been good. In a very few days these patients begin to improve mentally and physically and in a few months are able to return to their home. They are advised as to the cause of the disease and a diet and treatment is prepared for them before they leave the hospital but most of them are from the very poorest homes and do not have the funds to provide the balanced diet and already they are returning to the institution, from last year, with a new outbreak of pellagra. This is one of the serious questions, not only for the patient discharged from our hospitals but for the patient treated by the general practitioner, as most of the patients do not have the means to purchase the proper food and carry out the treatment as outlined.

PELLAGRA IN SOUTHEASTERN OKLAHOMA*

G. E. HARRIS, M.D.
HUGO

Pellagra is apparently and fundamentally a nutritional disease, manifesting itself in a train of various and progressing symptoms.

The positive etiology of pellagra is unknown, however, there are two schools of thought or opinion as to the causative factor of this disease. Goldberger believes that it is due to a low protein diet, while other able authorities believe that pellagra is due to a pathogenic intestinal flora or some other toxin.

Pathology: The skin lesions have several definite characteristics. They usually occur when the skin is exposed to sunlight. These lesions are usually symetric. The first stage is an erythema passing to a stage of edema and vesiculation to the chronic stage with thickening, scaling and pigmentation. There is always a moderate anemia. Neurologically: There is an atrophy of the lateral and posterior columns of the spinal cord. There is always more or less engorgement of the mucous membrane of the mouth and tongue and atrophy of the intestinal mucosa.

Symptoms: There is a dermatitis of the dorsal surfaces of the hand gradually extending up the extensor surfaces of the arms and many times well above the elbows, and frequently a dermatitis of the neck, upper portion of the chest, the malar prominences, forehead and often times the dorsum of the feet. There is a reddening and ulceration of the buccal and lingual mucous membrane and in fact a disturbance of the entire gastro-intestinal tract with diarrhoea.

There are mental symptoms manifesting themselves from a slight mental depression to dementia in some cases.

Neurologic and gastro-intestinal symptoms often manifest themselves before the dermatitis appears, thereby making an early diagnosis very difficult.

I wish to give you a brief history of some cases that have come under my observation in Southeastern Oklahoma within the past fifteen years.

I recall a family; a husband, wife and seven children who lived in the low lands of Red river. The wife died with pellagra. In a few days after her death, I was called to see this family and found that five of the children were suffering from the disease. I put these children on the ordinary treatment; arsenic, iron and anti-malarial treatment with the addition of an increased protein diet, including sweet milk. All recovered. The peculiar thing to me is just why all these children should develop this disease almost simultaneously,

*Read before the Section on General Medicine, Neurology, Pathology and Bacteriology, Annual Meeting, Oklahoma State Medical Association, Muskogee, May, 1927.

following the exposure to their mother, notwithstanding the fact that these people lived on an unbalanced diet and under very bad hygienic environments.

Case No. 2. This family consisted of a wife and eight children, the husband was a shoemaker. The wife developed a typical case of pellagra. Within a few weeks, five of the children, near the same time, contracted the disease. During this time a niece of the father of these children, a very healthy and robust girl of eighteen years of age from western Oklahoma, came to nurse and care for this family. Within four weeks after she came she developed a typical case of pellagra. I had two other cases with nurses contracting the disease from the patient, under similar circumstances. Consequently, I began to wonder if this disease was not caused by some infectious virus or at least it played some part as a causative factor. This family lived on a wholesome and nutritious diet, with good hygienic surroundings.

I have had the privilege of observing about seventy-five cases of pellagra in Southeastern Oklahoma within the past fifteen years and find that seventy-five per cent of them have been exposed to other pellagrins or at least have lived in a community near them.

Treatment: Our treatment has been along the line of an increased protein diet including sweet milk. I have almost universally given arsenic intravenously and in some cases brewers' yeast and where there appeared to be a hypo-acidity, we gave hydrochloric acid.

There has been a constant decline in the number of cases of pellagra in Southeastern Oklahoma in the past few years.

Prognosis: More than ninety per cent of these patients have recovered under the ordinary, present day treatment. In conclusion, I am inclined to believe as Jobling that some type of infection plays an important etiological factor in this disease.

ATHREPSIA (MARASMUS)*

K. C. REESE, M.D.
TULSA
SPRINGER CLINIC

Athrepsia is a stage of nutritional disturbance designated by a variety of names,

the names are of little importance. Athrepsia meaning without nourishment seems to be the most suitable one because there is no doubt that all these babies are starved. It is important that we should understand the nature of the disease, the pathology of the various organs, and the best method of treatment to rescue the child from disaster. I have chosen this subject because of its frequency in this part of the country. There have been at least fifteen or twenty cases of this condition brought to me for treatment since my two years in Tulsa. Our aim in child work is to prevent that from happening which should not happen, and I feel confident that all of these cases that have been brought to me, with the exception of one, should not have gone down to this stage. Some pediatricians claim that this disease does not occur in the midst of perfect health. How can you have health in a child when it is being starved? With one exception all these cases have occurred in the midst of what should have been—perfect health. The causes of their condition are simply errors in feeding and hygiene—the one exception being a case of bacillary dysentery which lasted about six weeks.

The various causes are as follows: A baby may develop this condition if he does not get sufficient food. In order to gain in weight, a normal baby should receive from 40 to 70 calories per pound of body weight in each 24 hours, number of calories depending upon the muscular development of the child, activity, etc. A very active baby may require more than twice the number of calories in order to gain that a quiet, sleepy baby may require, and when the food supply is cut down to the extent that the caloric demands of the body are not supplied, first the baby fails to gain, second he loses weight, then on down through athrepsia to death. This condition occurs not only in artificially fed babies, but in breast-fed babies when the breast milk is insufficient in amount.

This condition may also develop where the carbohydrates, fats and proteins are not properly balanced, or where the food does not contain the proper amount of vitamins, thus producing a food injury. Such a case was brought to me—a child being fed entirely on Mellin's Food and water.

Other causes are diarrheas, dysentery, acute or chronic infections, such as otitis media, tuberculosis, syphilis, etc. Any

*Read before the Section on Obstetrics and Pediatrics, Annual Meeting, Oklahoma State Medical Association, Muskogee, May 4-6, 1927.

condition which tends to decrease the digestive capacity of the intestinal tract and the assimilation of food may be the cause. I am not going into the causes in detail, because I want to give a case or two. I will just state that there is probably some infection in most of these cases which cannot be located, but the infection I believe to be due to a lowered resistance and the lowered resistance is due to insufficient amount of food, or improper balance of food, or a food not containing the necessary amount of the accessory food substances, example: Lack of Vitamine, water soluble C lowers the resistance of a child against infection about 50 per cent. Lack of other vitamins also lowers resistance, therefore, it is to be expected that these children be very easily infected, but the infection and the condition are usually due to the same thing.

There has been a great deal of work done on the pathology of this condition in recent years. Probably every cell in the body is injured to some extent, of course, depending upon the stage to which the disease has progressed. The cells show an inability to hold water; and this inability of the body cells to hold fluid must be due to some chemical process not yet explained. Some of these children must get at least 1000 cc. of fluid a day, given best perhaps in the peritoneal cavity. And the progress of the case can often be made on the ability of the cells to hold fluid. If the cells retain the fluid that is given in the above way the case will do well, but if they do not, transfusion is the next therapeutic measure indicated. Salts also are not retained. This is probably due to the fact that the injured cells in the intestinal tract cannot assimilate fat, as well as normal cells do, and the fatty acids which would be in excess in the intestinal tract combine with the alkalis of the body tissues, and as result of this demineralization sodium and potassium salts are lost in the stools, thus giving the clay colored stool—so commonly found in this condition.

The stomach capacity is also reduced, thus making it difficult to give the child enough food at one time to supply its demand. The intestinal secretions are also decreased, particularly the hydrochloric acid of the stomach. This is worked out by Doctor Marriott, of St. Louis. This lowered secretion of hydrochloric acid makes it necessary to feed some acidified food, such as lactic acid milk. Marriott

also states that the blood volume is lowered. It may be decreased fifty per cent or more. The blood is also thicker than normal, and due to these two conditions it is easily understood why the blood circulating through an organ is probably not more than one-third the normal. This of course will mean less food supply to the cells, thus every cell in the body will suffer from an insufficient amount of food.

The metabolic rate is also increased. This is due to the fact that the child is burning his own proteins. During starvation the carbohydrates and fats are burned first, then the proteins.

The protein foods increase the metabolic rate thirty per cent, thus it is possible that the metabolic rate be increased from 20 to 30 per cent. This would also mean an increased amount of calories per pound of body weight.

The clinical picture: Extreme emaciation, the face looks senile, the eyes are large and are in motion, the bones of the face stand out, and the mouth is large in comparison to the size of the face; skin is gray parchment like, and lies in folds, loosely covering the body tissues; tissue turgor is lost, the ribs stand out and the thorax looks small compared to the distended abdomen. The muscles of the extremities are small and stringy. There is no subcutaneous fat. Peristalsis is visible through the abdominal wall, due to atrophy of the abdominal muscles. Child seems happy, or at least not in pain. Respirations may be very rapid. If the child is ten months old all probabilities are that it will be rachitic. The ribs are soft and compressible; the diaphragm is weak and the weak diaphragm is unable to contract to the extent of making a deep respiration. The ribs being soft also compress when the diaphragm contracts, thus preventing air from entering the lungs. These children may be asthmatic as a result. The pulse is fairly slow unless there is an infection; the stool is usually clay colored and there is a tendency to diarrhea in most all cases.

Treatment: The food must be digestible and must be high in calories per ounce. The more calories per ounce the better the chances are for a cure. Only some form of acidified milks are digested by these babies. I use whole lactic acid milk, plus four or five ounces of Karo syrup to the quart. To this mixture I add twelve level table-spoonsful of Merrell Soule protein milk. I add enough water

to the protein milk to make a paste, and then add the paste to the acid milk Karo Syrup combination and pass through a fine sieve before feeding. I feed as much as the stomach will hold every three or four hours and I always feed at least six times per day. If the baby vomits, refeed, if he refuses to take the food, give by gavage. I have tried other foods with the acid milk, but find that the protein milk gives best results. It supplies the demand of the body cells for protein and it also tends to check the diarrhea which is so common in this condition. The baby should receive at least 150 calories per pound of body weight each 24 hours in order to do well. They often fail to gain for two or three weeks on this mixture, but this should not be discouraging because once they begin to gain—from then on the gain will probably be rapid. If the baby is on the breast, I believe it is better to express the milk and add the Merrell's Soule protein milk in the same way. Results are usually good. Other foods like orange juice, cod liver oil, vegetables and fruits, etc., should be added as fast as they will be tolerated. These give the vitamins, etc. We should not be changing the diet unless absolutely necessary because we usually go from bad to worse when changes are made too often. Vomiting and gas should not influence one to make a change. If the diarrhea becomes too severe, it might be advisable to cut down on the amount of Karo, or to increase the amount of protein milk. Physiological saline should be given subcutaneously or in the peritoneal cavity to supply the loss of fluid and salts—and always give as much as necessary. We may have to give as much as 500 to 1000 cc. daily to supply this demand. The amount, of course, depending upon the ability of the cells to hold the fluid. If the cells do not hold the fluid, give glucose 10 to 20 per cent intravenously. The tissues seems to hold glucose somewhat better than they hold saline. It also supplies some food. Both glucose and saline increases the blood volume, thus improving the impaired circulation. Blood transfusion is necessary in most cases. I usually give from 60 to 100 cc. Often improvement begins immediately after blood transfusion. Sun baths are also of great benefit in treatment of these cases.

Case No. 1: Age six months, normal birth, weight 8 pounds, 8 ounces. Family history negative; breast fed two months, then put on Eagle brand and kept on Eagle

brand until it came to me. Had frequent bowel movements at times and constipated at other times, gave castor oil and milk of magnesia for constipation, spit up a great deal of the time.

P. E. At the age of six months showed the clinical picture described in this paper, except that there was a rash (eczema) over the entire body. Cervical glands were enlarged, there was a wheezing in the chest (asthmatic) weight seven pounds, four ounces. I gave the baby transfusion of 60 cc. of blood, sent it to the hospital, and there gave 500 cc. of saline in the peritoneal cavity and put it on the formula as described. Twenty-four hours later found that the baby had gained two pounds. The weight then remained at about nine pounds, four ounces, for about two weeks. I gave on an average of two to three hundred cc. of the saline a day. The abdomen was distended a great deal of the time and it had a diarrhea a great deal of the time. It looked discouraging, but about the fourth week the baby began to gain on an average of from two to three ounces a day. Four months later the baby weighed 18 1-2 pounds. Orange juice and cod liver oil and vegetables, etc., were added as fast as the patient would tolerate them. Gave ultra-violet ray treatments for the rash as long as the baby was in the hospital, and advised the mother to give sun baths at home. This case seems to be a normal baby now, age 13 months, weight 22 pounds. Stands alone but does not walk.

Case No. 2: Age 4 1-2 months, weight six pounds, ten ounces; weight at birth, 10 pounds, 9 ounces, according to the mother. Labor was normal, and child normal at birth. Breast fed two weeks, diarrhea developed, took off the breast and put on diluted cow's milk, much gas and colic resulted. Kept on this formula three days and then put on Eagle brand for one week, did very poorly, screamed and cried, then put on Mellin's Food and water, four table-spoonsful of Mellin's Food, four ounces of water, kept on this about three weeks, and the mother said the baby seemed to lose weight on this formula. Then they added one ounce of cow's milk to three ounces of water and the same amount of Mellin's Food. No improvement occurred. Parents put the child back on Eagle brand until February 10th, 1927, when it came to my office, 4 1-2 months old, weighing six pounds, 10 ounces.

P. E. Clinical picture as described in this paper. The child looked terrible, and

I had no hope for its recovery, so did not give blood, gave 200 cc. of saline in the peritoneal cavity and sent the baby to the hospital. Ten hours later gave 500 cc. of saline the same way, and ordered baby put on the formula described. Also ordered 200 cc. of saline subcutaneously every 24 hours. Two days later found that the baby had gained 3 pounds. This baby gained very rapidly. On March 19th 1927, weight 12 pounds, 6 ounces. This case tends to prove that when the tissue cells hold fluid—you may expect a rather rapid gain. I have had similar experiences with other cases, and find that in practically every case results are good. When one of these cases develops an infection, like pneumonia or otitis media the prognosis is grave.

PREVENTATIVE MEDICINE IN INFANCY AND CHILDHOOD*

CLARK H. HALL, M.D.
OKLAHOMA CITY

Man power is a country's greatest asset and it is very important that it be maintained and promoted. During the world war it was found that thirty-three per cent of the young men were unfit. Numerous movements have sprung up during the last few years due apparently to an increasing appreciation and recognition of the value of health education and training. A great deal of the value derived is immediate but the greatest contribution can not be seen or measured, since the result lies in the effect on the child's future and on future generations.

The basic principle is the education of the mother in the care, feeding and general hygiene of normal infants. Keep the well baby well. The father must be interested and his cooperation obtained if the best results are to follow. From the very beginning the child should be on a very strict regime. The feeding schedule must be rigid and other proper habits formed early. At birth a child is like so much putty as far as habits are concerned. The finished product depending upon the time and care expended by those responsible for him.

Breast feeding is the foundation of good health in the baby and only in the rarest instances should the baby be weaned and

some other form of milk substituted. The artificially fed infant more frequently develops signs of malnutrition than the breast fed infant, even if the milk is poor. Many things can be done to improve the quantity and quality of the mothers' milk. During the first months the child should be examined at regular intervals by a physician to prevent the development of many possible defects and from time to time his diet should be changed and additions made.

Normal growth is a measure of health. A number of things influence the growth of the child and normal development depends upon the proper balance of these. He must have the proper food, surroundings and care. Then the glands of internal secretion such as the thyroid, pituitary, etc., play a large part. The weight of the child is the best way to determine his state of nutrition by comparison with weight charts obtained by taking the weights of a large number of normal children for a given age and height. Too little importance is attached to the weight records of older children. Their gain is not as regular as in infants and depends upon the food and such other things as activity, rest sleep, season, general, hygiene and illness.

There is a number of diseases that are peculiar to childhood. Some of these can be prevented, but each year many children die needlessly and others are left cripples for life because they have not been given the serums and vaccines that prevent their contracting the diseases. If every child were vaccinated against small-pox, it would be only a comparatively short time until the disease would cease to exist. Epidemics of small-pox are a blot on the community in which they occur. Typhoid fever is on a rapid decline, due to better hygiene and the administration of typhoid vaccine. Nearly all individuals can be rendered immune to diphtheria by the use of the toxin-antitoxin mixture. All children over six years should be given the Schick test. If it is found that the youngster is not immune then toxin-antitoxin mixture should be given. Since the Schick test has proved so reliable for determining susceptibility to diphtheria, and toxin-antitoxin mixtures have been so successful in vaccination against the disease, it is no wonder that similar attempts have been made in the prevention and treatment of scarlet fever. As a result the Dick test has been worked out and is applicable on a broad scale in a manner analogous to the utilization of the Schick test. It is too early to draw

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conclusions but it appears that probably we will soon have a reliable prophylactic vaccination against scarlet fever. The curative effect of anti-scarlet fever serum appears to have been definitely established. Indeed it may be stated that the administration of this serum should constitute a part of the treatment of every case of scarlet fever just as diphtheria antitoxin is used in the treatment of every case of diphtheria.

Nose and throat infection are quite common but their seriousness is often overlooked. Too many children are allowed to go on year after year with bad tonsils and adenoids. The ethmoid cells usually do not develop until the fourth year and later but the ethmoid area is present at birth and infection of this area is not at all uncommon in infancy and early childhood. It should always be thought of when there is a long continued nasal discharge. Disease of the nasal adnexa should be borne in mind as a possible cause of a long continued discharge from the nose, recurrent attacks of acute naso-pharyngitis, asthma, or chronic arthritis. Proper attention to the infections will usually prevent the picture of heart disease, pyelitis, etc., with which we are all familiar.

It is impossible in the time available to go over all the possibilities in preventative medicine in infancy and childhood. If a child is watched carefully from early infancy through later years most of the trouble can be avoided and at least the best possible physical condition maintained. One of the big problems is to educate the parents along these lines and show them what can be accomplished. The responsibility is with us. From the results already obtained with the comparatively little work done to date, it seems reasonable to expect really big things in the future when health education and supervision are developed to the extent that they should be.

THINGS NOT CARDIAC*

FREDERIC GRIFFIN DORWART, B.A., M.D.
MUSKOGEE

The out and out cardiac is easy of diagnosis. A case of chronic nephritis with hypertension and cardiac enlargement has

its earmarks. Rheumatic heart disease with aortic regurgitation is defined. Auricular fibrillation, extra systole, tachycardia, all have their characteristics. Heart failure is almost evident in its symptoms and signs, but the non cardiac with symptoms or signs of the cardiac, is the case the more difficult of diagnosis.

During the World war, numbers of men were turned down, placed in deferred classes because of a systolic murmur, but without any complaint referable to the heart. At this day, ten years later, we see these men in perfect physical condition, able to carry on and still without symptoms. Ten, twenty, thirty years from now, the aspect of such cases will be the same. We have all seen men seventy to eighty years of age, with loud, almost ringing systolic murmurs, known to have been present for twenty to thirty years. During fevers, systolic murmurs frequently appear to die out with a subsidence of the fever, and frequently exertion in a normal being with its consequent temporary tachycardia will bring out a systolic murmur not previously present. In the anemias, especially pernicious anemia, systolic murmurs are present. At the other end of the scale, is the youngster with a basal systolic murmur. The point here is that not one of these cases is a true diagnosable cardiac and should not be termed as such. A systolic murmur with no other sign, is a meaningless thing.

The tachycardias are interesting. How frequently in the young adult do we see cases complaining of nothing but fast beating of the heart and still with no cardiac disease demonstrable by any tests known to us. The sounds of the heart being normal, no murmurs present, electrocardiograph showing only a rapid auricular and ventricular rate, the seven foot plate demonstrating no enlargement, the basal metabolic rate being normal. Thyroid heart disease need not be suspected in these cases for a toxic thyroid never evidences itself in tachycardia alone. Therefore, so far as their hearts are concerned, patients with such tachycardias should weather heart disease just as well as the typically beating heart. And even what evidence of disease have we in the paroxysmal tachycardias? None, except the end stages after years and years of wear and tear.

The neurasthenic, the neuro-circulatory asthenic, the effort syndrome case is in another class. In these cases, we have all

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the symptoms, and some more, of the true cardiac. Yet who would place these people in the ranks of the cardiacs. Of course it is quite necessary to make some sort of a diagnosis here, but not an incorrect one for the stigma of a cardiac is a real stigma.

Still, again there are those cases complaining of such things as palpitation, pain in the praecordium, discomfort in the praecordium, a thumping heart, irregular heart beat and what not. Even where none of such exists. Not to be placed in the class of the neurasthenic, this sort of case can be told to go along its way, first being certain that this is done so on firm ground.

For how horrible is the state of the man who believes and knows that he has heart disease where no heart disease exists. And not until the complexity of our nervous systems is unraveled, can we ever hope to be as accurate in the diagnosis of heart disease as our training would have us be.

TREATMENT OF ACUTE RHEUMATIC FEVER*

C. K. LOGAN, A.B., M. D.
HOMINY

The title of this paper should more properly be called "A Treatment of Acute Rheumatic Fever," as its purpose is to advocate the rectal use of sodium salicylate in massive doses. It is a treatment that has been referred to only a few times in medical literature and, while it is a routine treatment in several of our large hospitals, it has never received the consideration it deserved by the profession in general.

As this is the primary purpose of this paper, I shall pass hurriedly over the etiology, pathology, diagnosis and even the concurrent treatment.

The etiology of rheumatic fever is still a question of debate although it is generally conceded to be due to an infectious organism. The mode of infection is practically always through the tonsils. Tonsilitis being always present it may be regarded an etiological factor. Whether the same organism causes the tonsilitis and rheumatic fever is not clear.

Rheumatic fever is an acute infectious disease showing a sudden onset with a marked febrile reaction, inflammatory involvements of the joints, usually transient, and a strong tendency to myocarditis and endocarditis with permanent cardiac damages. The acute febrile state may last from a few days to three or four weeks, after which may follow an indefinite period showing a slight daily rise of temperature. The joint symptoms appear early and may be confined to a single joint for a time or several may be involved simultaneously. The pain is usually severe.

Through the past years many remedies have been used for rheumatic fever. No specific serum or vaccine has ever been successfully produced. The salicylic acid group of drugs are the only ones that have stood the test of time. Sodium salicylate may be justly designated as a specific in rheumatic fever and is probably etiotropic, i. e., acting on the cause of the disease through its bactericidal power. However in the usual administration of it, by mouth, the results obtained by it have not been certain, the source of the disease has not been materially shortened and the liability to unfortunate cardiac complications has not been removed. The reason it has not given more satisfactory results is due to the stomach not being able to tolerate sufficient amounts of the drug. As a solution to this problem intra rectal administration of sodium salicylate has been offered as the best method yet devised for the treatment of acute rheumatic fever.

This method was advocated by Heyn (1) as early as 1914 after experiences with 122 cases and the following advantages were claimed by him; (1) it is easy to administer; (2) the drug is readily absorbable; (3) there is a minimum of untoward effect; (4) large quantities of the drug are able to be administered as is to be advocated in bactericidal therapy; (5) the residue of the drug may be removed from the bowel by a subsequent enema, if the dosage ever proves excessive; (6) the results are more prompt than by any other method.

The method of treatment is as follows: On the first day the patient is given 60 to 120 grains by mouth in 15 to 30 grain doses each with 20 to 30 grains of sodium bicarbonate in water, and 100 to 150 grains of sodium salicylate in starch solution per rectum, morning and evening. Upon appearance of stomach irritation the mouth

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dose may be discontinued. The rectal doses are continued for two or three days until the acute symptoms subside and then cut down to 50 to 75 grains per dose night and evening until all of the symptoms disappear. The patient is kept in bed without medication for 10 to 14 days to prevent cardiac complications. If the symptoms return repeat the big doses of sodium salicylate as given the first day, for one day only, which will usually be sufficient.

The method for giving the rectal doses is as follows: Give a cleansing enema of warm soap suds one hour before the rectal dose is to be given, and try to secure its complete action. Then dissolve 100 to 150 grains of sodium salicylate in six ounces of hot water and mix this with a rounded tablespoonful of ordinary household starch that has been made into a paste with cold water. This is injected high into the rectum through a small catheter, introducing it 4 or 5 inches. The injection should be introduced slowly. A force syringe or the gravity method either may be used. This must be retained. It is supposed to be retained better and absorbed more rapidly if the patient is lying on his left side.

The first adult dose in men should be 100 to 150 grains, depending upon the severity of the case, and should be slightly less in women as they are apparently more susceptible to salicylate than men. The usual symptoms of salicylism which appear are tinnitus and excessive perspiration. Vomiting is rare. The symptoms of salicylism are usually severest within three to six hours and if the patient becomes unduly uncomfortable the remaining unabsorbed portion of salicylate may be washed out of the bowel by a plain enema.

When we consider the results obtained by other treatments whereby rheumatic fever runs variable courses, with migrating involvement of usually many joints, each effected joint remaining in an acute stage of inflammation for several days, and the attack possibly running a severe course of one or two months, and consider the claims of this treatment whereby the fever and pain and most of the symptoms are abolished in the first few days we can almost regard this treatment as a specific and often as an abortive treatment.

Along with this treatment the patient should be put at complete rest and the affected joints protected with pillows. Codein or morphine may be given for pain,

although it is rarely necessary with this treatment. The diet should be low in protein and sugar. And last, but not least, the tonsils should be removed at the earliest possible time the patient's condition will permit. This is sometimes possible within a few days after the attack begins. This is the best security against recurrences and cardiac complications.

This treatment was not sufficiently impressed upon me until last year in a lecture by Dr. L. D. Thompson. (2) Since this time I have had nine cases, which is an unusual number for my practice, and I think this was due to the fact that rheumatic fever often occurs in waves or small epidemics.

The following five cases are illustrative and show the only case in which highly satisfactory results were not secured.

Case 1. A woman, aged 36. Attack began with slight chill, sore throat, aching pains over body and severe pain and swelling in both wrists. I saw her on the morning of the second day. Her temperature at this time was 103.2. She was given 120 grains of sodium salicylate that day by mouth and two rectal injections of 150 grains each. A total of 420 grains of sodium salicylate. She complained of the general symptoms of salicylism with some nausea toward evening, tinnitus, mental dullness and free perspiration. By evening practically all symptoms of the disease were gone except the swelling of the wrist joints. She was free of fever and pain and remained free from that time. The following day the mouth dosage was discontinued and she was given two rectal enemas of 100 grains each, per day, for the next three days. She remained in bed for the next week without any medication and remained free from all symptoms. There were no complications. Her tonsils were removed seven days after the treatment was started.

Case 2. Man, aged 30. An attack three years previous. This case began with both wrists and both ankles involved and a temperature of 101.6. Ninety grains of sodium salicylate per day was given by mouth and 300 grains per rectum, given in two injections. This was continued for three days. The temperature and pain left the first 24 hours. There were no symptoms of salicylism except a slight tinnitus and free perspiration. The salicylate was then continued for three more days with 100 grains per day divided into two injections. By this time his joint symptoms were entirely

gone and he was discharged as cured with instructions to stay in bed for at least one week. There were no cardiac complications, no recurrences.

Case 3. Woman, aged 26. Patient was seen on third day with a temperature of 103 and severe involvement of both knees and both ankles. Sixty grains of sodium salicylate was given by mouth and 200 grains per rectum the first two days. On the second day her temperature was 101.6 and only her right ankle was acutely affected. The mouth dose was discontinued the third day and 150 grains given per rectum in the morning and 100 grains given in the evening. After the third day her temperature was normal and there were no joint symptoms remaining. One hundred grains per day were given in 50 grain injections for the next three days. There was no recurrence nor cardiac symptoms.

Case 4. Woman, aged 34. Both ankles and right wrist and phalangeal joints were involved with a temperature of 102. 20 grains of sodium salicylate with 20 grains of sodium bicarbonate was ordered every three hours by mouth and an enema of 150 grains of sodium salicylate was given. By evening the symptoms of salicylism were severe. She was perspiring freely, with severe tinnitus and general mental dullness amounting almost to delirium. She had refused the mouth dose after the third dose, or 60 grains, had been given. However her joint symptoms were improved and her temperature was 100.2. The following three days she was given 50 grain enemas twice daily which she stood without so very much discomfort. By this time she was free of fever and all joint symptoms. Medication was discontinued. Two days later she had recurrence of joint symptoms in the same joints with a temperature of 100. She was given 200 grains of sodium salicylate in one dose after which there was no recurrence of either fever or joint symptoms. The symptoms of salicylism, following this dose, were not nearly so severe as they were the first day.

Case 5. This case illustrates the only one out of mine where satisfactory results were not obtained. The patient was a man 41 years of age with a history of slight chronic joint rheumatism for the past 5 or 6 years. Tonsilitis and pyorrhea were present. He had been in bed 5 or 6 days when I first saw him and had a tem-

perature of 102.6. He had severe involvement of his shoulders, elbows, wrists, knee and ankles. He was given 90 grains of sodium salicylate per mouth and 300 grains per rectum for three days. His fever became practically normal and his joints were improved but were still acute. The treatment was continued for four more days with 60 grains by mouth and 200 grains per rectum. By this time he was free of fever and the pain was practically gone but considerable swelling remained in his wrists, knees and ankles. He complained severely of the effects of the salicylates and of irritation around the anus. He continued with from 30 to 60 grains by mouth per day and every day or two he would consent to an enema of 50 or 100 grains. He had a rise of temperature every few days of a degree or more and remained in bed five weeks in all before he was well. He submitted to dentistry 10 days after he was under treatment but refused tonsilectomy. I consider this case refractory on account of the chronic nature of his trouble, of the amount of focal infection and of his inability to take sufficient sodium salicylate.

I realize that this is a small number of cases to present to this body, but others (3) have reported 388 cases in all with uniformly good results. I believe the results secured in the above cases recommends itself sufficiently.

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INFANT FEEDING WITH ACIDIFIED MILKS*

WAYNE A. RUPE, M.D.
ST. LOUIS, MO.

Of the several varieties of acid milk which have been proven by experience to be eminently satisfactory the cultured lactic acid milk is the best. It can be obtained from dairies and laboratories in larger cities and can be prepared in the home. But preparation of the cultured milk in the home is occasionally attended by some difficulty. It is not perfectly practical as yet.

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The next best, and most practical, of all the acid milk preparations is the powdered lactic acid milk made by Merrell-Soule & Co., of Syracuse, N. Y., and Mead, Johnson and Co., of Evansville, Indiana. Feeding with this preparation is the essence of simplicity. The disadvantage of the powdered milk is its cost. It costs as much as any other proprietary food.

Let us consider the preparation of acid milk in a rural district. Cultured milk probably would not be available. Cow's milk is cheap so we are not justified, perhaps, in asking the mother to buy powdered lactic acid milk. Acidified milks practically as satisfactory as those just mentioned can be easily prepared by the most ignorant woman, and very cheaply, by using c. p. lactic acid, orange juice, or lemon juice.

The first point for consideration is the cow's milk out of which we purpose to make our acid milk. The milk should not contain over 4 per cent fat. Milk which contains from 2 to 3 per cent fat is still better. Overfeeding disturbances are usually due to excessive fat content of the milk. If our milk contains no more than 3 per cent fat we may rest assured that we will never have an overfeeding disturbance in an acid milk baby. Mixed herd milk rarely contains an excess of fat. Milk obtained from large dairies practically never does. The dairymen watch that point very closely. Holstein milk is practically always safe from the standpoint of its fat content. If Jersey, Guernsey, or Swiss milk is used the milk should be permitted to set for at least six hours. It should then be skimmed and the acid milk made from the remaining partially skimmed milk.

The next point is the choice of acid to be added. There is very little choice between c. p. lactic acid, orange juice, and lemon juice. It requires from 1 1-2 to 2 drams of c. p. lactic acid to properly acidify 1 quart of milk. Two oz. of orange juice, or 2-3 of an oz. of lemon juice properly acidify 1 quart of milk. It is cheapest to use c. p. lactic acid. Orange juice and lemon juice milks have the great advantage of containing antiscorbutic vitamin.

The preparation of the acid milk is very simple. The mother boils the quart of milk for 3 minutes, skims off the skum, and then cools the milk until it is cold. The cooling may be slow or quick. But the milk must be cold before the acid or fruit

juice is added. When the milk is cold the acid or fruit juice is added slowly while the mother stirs the milk fairly vigorously. The milk should be curdled by the amounts of acid or fruit juice mentioned. The curd will be small and soft.

Now sugar must be added to the milk. The sugar of choice is brown Karo syrup. This sugar is so quickly absorbed from the intestinal tract that there is practically no danger of diarrhea due to fermentation or hydrogogue effect. For the first few days of feeding one usually adds 2 oz. of Karo to the quart of milk. This quantity is then increased to 3 oz.

As soon as the Karo has been stirred into the milk the mixture is ready to be offered to the baby. It should, of course, never be diluted. It is, as it stands, as perfectly digestible as breast milk.

It should be kept on ice, or, if ice is not available, in a cool place. It will not spoil, however, if kept at room temperature.

If kept cold it should be warmed before it is fed.

The hole in the nipple has to be enlarged to permit the passage of the large curds. The hole should be made large enough that, when the bottle is inverted, milk will drip slowly through the hole.

If one simple point of technique in the administration of the feeding is observed 95 per cent of babies can be reared on a 4 hour schedule. This point is that the baby be held to the mother's shoulder and patted on the back at least 2 or 3 times during the ingestion of the feeding and always at the end of the feeding. This procedure causes the baby to eructate such air as he has probably swallowed and enables him to get a stomach full of food at each feeding—rather than a stomach full or over full of a mixture of milk and air. To prevent air swallowing in so far as is possible the mother should hold the bottle so that the nipple is always full of milk. If every baby is permitted to get his stomach full of food at each feeding 95 per cent of them will go 4 hours before wanting to eat again. On this feeding babies are so regular in their eating habits that one can accurately estimate the time of day by the baby's hunger cry. If he is crying for his third feeding it is very probably 10 or 15 minutes to 2 p. m.

By the age of 3 1-2 or 4 months practically every baby on the acid-Karo mixture automatically discontinues his night feedings and is therefore taking only five

feedings in 24 hours at, for instance, 6-10-2-6-10. Girl babies usually eliminate the 10 p. m. feeding also so that at 4 months of age most girl babies are eating only 4 times in 24 hours at, for instance, 6-10-2-6.

Such schedule arrangement is, of course, a great boon to the mother. She is saved a great deal of time and worry and her sleep at night is never broken by the cry of a hungry baby.

And in spite of the fact that the baby takes only from 4 to 6 feedings in 24 hours it gains weight more rapidly than does the baby which takes—during the first 8 to 12 months of life—6 to 8 feedings of sweetened condensed milk, sweet milk mixture, or breast milk.

In this connection it seems to me that we must discard our old ideas as to proper weight-gain for babies. Most textbooks presently available state that a baby should double his birth-weight at 5 months and triple it at 12 months. I believe that most babies will gain more rapidly if they are given as much food as nature would like them to have. I am out of sympathy with the prevalent idea that it is always wise to slightly underfeed a baby. I thoroughly appreciate the fact that an over-feeding disturbance is decidedly unpleasant to baby, mother, and physician. I argue that the baby should be fed as much as nature wants it to have and that the skillful physician will always see to it that no baby under his care is over-fed.

Fed with acid milk babies are given a chance to gain as rapidly as nature would like them to gain. Most acid milk babies more than triple their birth weight at 1 year. Many quadruple their birth weight. It is very common to see 1 year old acid-milk babies weighing 25 to 30 pounds.

Such weight gain would be pathological—i.e.—due to waterlogging of the tissue—on many foods, for instance sweetened condensed milk. The babies would not actually be fat. Their subcutaneous tissue would be soft, pudgy, inelastic. Their muscles would be soft and flabby.

Babies reared on acid milks are never waterlogged—no matter how heavy they may be. Their subcutaneous tissue is firm and resilient, their muscles hard and tonic.

Infection of the gastro-intestinal tract is, of course, the most serious cause of diarrhea. Babies reared on acid milk never have infectious diarrhea. The acid-

ity of the milk prevents contamination with the usual saprophytic organs. The acid milk is—to a very high degree, bactericidal. Diarrhea due to improper balance of the diet does not occur in acid milk babies. The only circumstances which ever cause diarrhea in babies fed on acid milk are hot weather, parenteral infection, and gastric hyperacidity.

Consequently acid milk is an ideal food for use in the families of the ignorant where little thought is given to sterilization and subsequent prevention of contamination of the baby's food.

In localities where acid milks are extensively used the incidence of diarrheal disturbances in infants has been most astoundingly decreased.

In the treatment of marasmus, or athrepsia, to use the modern term, the whole acid milk—Karo umbination is preferable to any other food including breast milk.

In the treatment of the ordinary summer complaint and of dysentery the skimmed acid milk is perhaps more satisfactory than any other food. All of us have been accustomed to administer Bulgarian bacillus or bacillus acidophilus tablets or culture in our treatment of these conditions. Our results are much more satisfactory if we feed to these cases the acidified milk. Whether it is prepared by culture or by the addition of lactic acid, orange juice, or lemon juice makes no appreciable difference.

One of the two great difficulties encountered in feeding acid milks lies in getting the baby to take the mixture. The degree of difficulty depends upon the age of the baby, and his previous food. The younger the baby the more readily he takes the milk. We are often unsuccessful when we try to get an 8 to 10 months' old baby to take an acid milk. Unless there is some nutritional disturbance such as athrepsia, diarrhea, or dysentery existing in babies at that age we may not be justified in attempting to feed them acid milk except from the general considerations of safety and better ultimate condition.

There are 2 methods, however, which can be employed to shift nearly any baby from any food to acid milk. The drastic method is starvation. It will be successful in every case except a very rare exceptionally neurotic child.

The other method—which is more humane—may be called the gradual substi-

tution method. Suppose the child is taking 7 oz. of E. B. every 3 hours. We can offer him a mixture consisting of 6 1-2 oz. of E. B. plus 1-2 oz. of acid milk. Within a day or so at the outside the child will be taking this mixture as well as he ever took the E. B. We can now offer a mixture of 6 oz. plus 1 oz. of acid milk. This will be well taken almost immediately. As soon as it is well taken we can decrease E. B. and increase acid milk rapidly until, within a week, the child is automatically switched over to the acid milk. The same scheme can be followed with the sweet milk mixture.

The other disadvantage of acid milk lies in the fact that it causes hyperacidity symptoms in about 20 per cent of young babies. In the vast majority of these babies the symptoms are so mild that they may be essentially discounted. The symptoms of mild hyperacidity are (1) slight amount of regurgitation which cannot be controlled by ordinary methods (2) slight excess formation of intestinal gas (3) slight and occasional colicky pain (4) a tendency to frequent bowel movements which are probably too highly acid and too loose to be considered normal. These milk symptoms invariably improve gradually and have always cleared up by the time the baby is 2 to 3 months of age—because the tendency to excess acid secretion by the baby gradually diminishes. While these symptoms do persist they, of course, constitute a general symptom complex which would be considered as colic.

In the meantime—to take care of the symptoms—the physician may give alkali just before each feeding in doses just large enough to relieve symptoms. Or he may add powdered protein milk to the acid milk.

The symptoms of severe hyperacidity are (1) definite attempt to refuse the acid milk (2) eager gulping of non-acid milk (3) vomiting of acid milk (4) irritation of oral mucus membrane by vomiting acid (5) diarrhea (6) scalded buttocks (7) painful urination (8) papular dermatitis (9) convulsions.

Severe hyperacidity occurs in only 1 or 2 per cent of babies. It is treated by withdrawal of the acid milk and substitution of protein milk until the symptoms moderate. Then it is best to put the child on a sweet milk mixture.

QUININE HYPERSENSITIVENESS FOLLOWING RECTAL ANALGESIA*

CHAS. EDGAR WHITE, M.D.
MUSKOGEE.

It is the opinion of some authorities that quinine is not absorbed per rectum and that there is no advantage in using it in the rectal analgesia as prescribed by Gwaltmey. I recently had a case that developed a marked quinine rash following its use in a rectal analgesia.

Mrs. F., a primipara was given rectal analgesia about two hours before delivery. In four hours from the time the analgesia had been administered the patient was complaining of an itching and burning all over her body. Her temperature had risen to 103, though she was free of temperature at time of admittance to hospital. In about six hours from the time she had been given the rectal analgesia there was a pronounced erythematous condition all over the body, and at which time a fine papular rash was appearing. The rash continued to increase and the itching and burning so intense that it was necessary to give her morphine for relief. This condition existed for three days, at which time the symptoms gradually disappeared. A bran like desquamation followed the subsidence of the rash. There were no other complications.

I was unable to account for the patient's symptoms when called back to see her. In questioning the patient I was told by her mother that she always developed a rash when given quinine. Her mother advised me that every time she attempted to give her daughter this drug, when she was a child, she developed a condition identical to the one that occurred following the delivery.

When rectal analgesia is used a careful history should be obtained from the patient relative to their sensitiveness to quinine. Harrar states that quinine is absorbed by the rectum and can be recovered from the urine of parturients who have been given rectal analgesia. However, the drug should always be used in the analgesic mixture, unless there is contra indication, as it has been proven that there is delay of the second stage when it is omitted.

REFERENCE:

Harrar, American Journal Obstetrics and Gynecology, 1927, xiii, 486.

*Read before the Section on Obstetrics and Pediatrics, Annual Meeting, Oklahoma State Medical Association, Muskogee, May 4-6, 1927.

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DR. CLAUDE A. THOMPSON.....Editor-in-Chief
Barnes Building, Muskogee, Okla.

DR. P. P. NESBITT.....Associate Editor
Palace Building, Tulsa, Okla.

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Local news of possible interest to the medical profession, notes on removals, changes in address, birth, deaths and weddings will be gratefully received.

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EDITORIAL

Editorial Notes—Personal and General

REPORTING COMMUNICABLE DISEASES

This is such an old subject that it is with hesitation that we again approach it. It would seem that every physician worthy of the name would have the small energy necessary to impel him to cooperate in the enforcement of plainly written statutes of Oklahoma, which, among other things read in part:

"It shall be the duty of all practicing physicians to make a report to the county superintendent of public health for said county, upon forms to be prescribed and furnished by the State Board of Health, of all cases of infectious and contagious diseases,and upon failure on the part of the physician so to report said disease as herein provided, he shall be deemed guilty of a misdemeanor,....."

This seems plain enough not to call for misunderstanding upon the part of anyone. The State Department of Health states that from 2300 physicians in the State, each receiving a weekly report card from the Department, there should have been 2300 reports received by the Bureau each week. As a matter of fact they are 51 per cent short of perfection 1925 and 44 per cent for 1926. Of the 2300 physicians many of them, from time to time, either demand some form of assistance from the Department, or have it handed to them gratuitously and unsought. The Department thinks that in these cases, at least, poor sportsmanship is shown and that a callous lack of cooperation is evidenced. They are right, but we can see no further reason for longer railing out and complaining about it. If courtesy and reason does not appeal to the physician to energize him into complying with a law, as mandatory upon him as any other law, that for instance prohibiting assault and battery, automobile theft, etc., then the Department has its recourse and is justified in taking it regardless of the immediate howl of protest that will be raised to the proper authority. If the Department really wants its percentage of reports to suddenly take on proper proportions, if it wishes its vital statistics to immediately prove worth while and assume the position among the sisterhood of states they should assume and occupy—the *Journal* has this remedy to offer—and it offers it in good faith, believing it will prove almost a specific: Call on the County Attorney with your complaints and troubles. If he does not act, appeal to the Governor to instruct the Attorney General to make the County Attorney act. After one overhauling in court the hostile, non-cooperative, recalcitrant physician will become subdued and have more respect for the small ordinances of his State than he has heretofore evinced.

THE WASHINGTON A. M. A. MEETING

The last annual session of the American Medical Association held in Washing-

ton in May was thoroughly up to the usual performance of that body in most respects. The scientific sections were fully attended, the scientific exhibits very interesting, while many unusual commercial exhibits were observed, due no doubt to the geographical location of the meeting. Moving picture exhibitions of many types of activity were also noted.

It cannot be said that Washington, regardless of its beauties from the architectural and historical standpoint, is an ideal place for a meeting of the tremendous scope of the A. M. A. All the fine buildings, and they are wonderful from every standpoint, happen to be occupied—crowded—with the official activities of Government, so there is nothing left for visitors, but "Parlors" A and B in the various hotels, or some semi-private hall or club for sections and gatherings. The Washington auditorium, housing the registration and various forms of exhibits is so constructed that these exhibits had to be placed on various floors, rather than one level as is usually the case at the meetings. This arrangement operates for discomfort and confusion.

Oklahoma was well represented in the House of Delegates by Delegates Rogers, Cook and Lain, who were on the job at every roll call. The House selected one of the leaders in Scientific Medicine, Dr. W. S. Thayer, Baltimore, as President, re-elected practically every one of the previously active executives in charge at Chicago and selected Minneapolis as the meeting place for 1928.

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MEDICAL EDUCATION IN OKLAHOMA—(A Further Word) by H. COULTER TODD, A. M., M. D.

Our esteemed Dr. J. S. Fulton, in his president's address at Muskogee, referring to the subject of medical education in Oklahoma, made some statements, which, while they may be correct, are at least in some respects misleading.

He says, "Dr. Long became Dean of the University of Oklahoma School of Medicine in 1915. At that time the school was a B grade school, with an incomplete faculty working in temporary and rented quarters. It owned no property save some inadequate laboratory equipment."

In justice to several of our outstanding physicians and surgeons who hold diplomas from the Epworth College of Medicine, I believe it is only fair to state that this institution existed before the A, B, C,

D, classification of American Medical Schools, but it was a member in good standing of the Association of Southern Medical Schools.

In 1906 twenty (20) Oklahoma City doctors paid one thousand (\$1,000.00) dollars each to purchase and equip a large building at the corner of Sixth and Broadway to house the rapidly growing Epworth College of Medicine which affiliated with St. Anthony and the City Hospital for clinical instruction.

These twenty \$1,000.00 offerings were not pledges, but each one was paid in cash. Furthermore, not one of these doctors connected with Epworth ever received one cent for the services he rendered, all the tuition received being put back into equipment for teaching.

In the mind and heart of each of these twenty doctors, this one thousand dollars was a gift to medical education in this State.

In 1910 the University of Oklahoma took over the Epworth College of Medicine at the request of the Epworth School, its student body and its complete corps of twenty trained teachers, who had been struggling since 1924 to build a medical teaching organization in Oklahoma.

The record of a number of graduates of The Epworth School will bear testimony as to how well they succeeded in a work for which not a man received a dollar in remuneration and to which they gave unstintingly of their time. Two of the present members of the faculty of the University of Oklahoma School of Medicine are Epworth graduates.

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Editorial Notes—Personal and General

DR. I. W. BOLLINGER, Henryetta, has returned from a visit to Chicago.

UNIVERSITY OF OKLAHOMA, Norman, will offer three courses in gross anatomy during the summer. The second term opens July 26.

DR. C. M. MORGAN, Chandler, who has been ill in Colorado, has returned to Chandler temporarily and is preparing to move to New Mexico.

COMANCHE COUNTY MEDICAL Society entertained twenty-five doctors from Tillman and Stephens Counties and Ft. Sill on the evening of May 10th. Dinner was served, after which papers on "Post Natal Conditions" by Dr. W. S. Ivy, Duncan, and "Preventative Medicine" by Colonel M. A. Delaney, Ft. Sill, were read. Dr. C. C. Allen, Frederick, presented some case reports.

DR. and MRS. W. H. MILES, Oklahoma City, announce the birth of a son, June 1st.

DR. A. G. COWLES, Ardmore, left that city June 1st for his new location, San Antonio, Texas.

DR. J. C. BUSHYHEAD, Claremore, suffered a fracture of both bones of the arm recently when his machine "backfired."

DR. JAS. M. BUCHANAN, Tulsa, was painfully injured when his auto turned over an embankment near Springfield, May 24th.

DR. THOS. W. DOWDY, Wilson, has moved to Oklahoma City, and will be associated with Dr. T. A. Buchanan, American National Building.

DR. E. R. BARKER, Healdton, after several months' serious illness, is on the road to recovery and will shortly be able to resume his work.

THE STAFF of El Reno Sanitarium tendered the Canadian County Medical Society a dinner, May 10th. No medical program was presented, but the evening was enlivened with musical selections.

DR. and MRS. HORACE REED, Oklahoma City, are attending the European Rotary Convention, and will incidentally visit other European centers.

NORMAN'S American Legion Hospital, which has been temporarily closed for some time has been reopened by Drs. Ben H. Cooley and W. T. Mayfield, who have acquired a lease from the receiver of the institution. It will be open to all reputable physicians of the county.

OKLAHOMA COUNTY Commissioners are dissatisfied with its hospital bills and an investigation is being launched to determine if too many transients are not purposely "locating" in the city merely to acquire status as citizens and immediately thereafter acquiring a comfortable hospital location.

THE AMERICAN BOARD of Otolaryngology conducted an examination at Washington, D. C., on May 16 and 17, and at Spokane, Wash., on June 4. Of the 142 men examined at Washington, D. C., 119 were passed and 23 failed to pass the examination. In Spokane, the number passed was 46, and the number failed was 6. The next examination will be held in Detroit on September 12, 1927. The applications for examination should be sent to Dr. H. W. Loeb, Secretary, 1402 South Grand Boulevard, St. Louis, Missouri.

NEW MORNINGSIDE HOSPITAL, Tulsa, is rapidly undergoing construction, the contractors promising occupancy by November 1st. The hospital, when completed, will be the last word in modern hospital construction. Financed by Mr. and Mrs. William McNulty, it occupies one of the most commanding locations in the city. It will contain 250 rooms besides storage, service, operating and other adjunct and necessary space. The building will have a full basement, ground floor, four full floors above that and a fifth floor occupying one third of the front wing. The architecture is very attractive.

UNIVERSITY HOSPITAL STAFF, Oklahoma City, will soon begin the issuance of a quarterly bulletin.

DR. F. B. FITE, and family, Muskogee, will spend the summer in their new summer cottage in Minnesota.

DR. W. H. KINGMAN, Bartlesville, has been appointed county superintendent of health, vice Dr. O. S. Somerville, resigned.

DR. R. E. JONES, Stigler, has accepted appointment as full time health officer for Seminole County. He will reside in Wewoka.

DR. W. C. MITCHENER, Okmulgee, recently successfully underwent an operation for appendicitis and is recuperating in the hills of Arkansas.

DR. DIVONIS WORTEN and daughter, Pawhuska, are visiting European points of interest. While away Dr. Worten will visit various Medical centers.

DRS. C. B. and PAULINE BARKER, Guthrie, sailed June 11th on the S. S. Volendam for Vienna, where they will spend the next three months studying.

OKLAHOMA physicians generally responded promptly and efficiently to the call of the army for the purpose of making physical examinations of candidates for the Citizens Military Training Camps.

DR. STEPHEN SMITH SANGER.

Dr. S. S. Sanger, died suddenly at his home Friday morning, June 3. Funeral services were held June 5, under auspices of the Methodist Church and burial was made at the Yukon cemetery. The cause of death was heart disease, from which Dr. Sanger had suffered intermittent attacks for about a year previous to his death.

Dr. Sanger was 52 years, eight months and fourteen days old at the time of his death. Born at Enterprise, Ark., he received his preliminary education in that community, later graduating from Fort Worth Medical College. Twenty-eight years since that time has found him constantly at his labors at Yukon. It is said he never knew what a real vacation meant, only leaving his home for the purpose of taking such postgraduate work as he deemed necessary or could attend. He is survived by his wife and five sons, Paul, Stephen S., Jr., Gordon, Welborn, Walter and one daughter, Leah, of his immediate family. He is a brother of Dr. Fenton M. Sanger, Oklahoma City, Paul of Drumright, and S. L., a dentist of Yukon.

Dr. Sanger has been a consistent and continuous member of Canadian County Medical Society and the State Association since their organization. His passing is mourned by the solid and substantial citizenship of his county, and is a distinct loss to the community.

DR. and MRS. LEA A. RIELY, Oklahoma City, sailed on the Rotterdam, June 4th, for a visit to various European centers. Dr. Riely will return about August 1, his family remaining until October 1.

COLONEL HUGH SCOTT, Muskogee, Drs. T. B. Hinson, Enid; L. E. Emanuel, Chickasha, and Fred S. Clinton, were Oklahoma representatives attending the Kansas City meeting of the Midwest Hospital Association at Kansas City in May.

DR. S. R. CUNNINGHAM, Oklahoma City, working in connection with the Crippled Children's Association of Oklahoma, recently held a clinic at Chickasha where nearly fifty patients were examined and advised as to care and treatment.

DR. HARRY BREESE, for many years a practitioner of Henryetta, has moved to San Diego, Calif., Schilling Building, where he will make his future home. The departure of Dr. Breese will be universally regretted. The best wishes of hosts of good friends and the JOURNAL go with him.

DR. H. D. SHANKLE, Hartshorne, has just returned from a vacation spent in the Panama Canal Zone, Costa Rico and Nicaragua. Last year Dr. Shankle visited Cuba, Honduras and Guatemala. From these visits Dr. Shankle concludes that the American medical profession must begin to pay more attention to tropical diseases than ever before, for one may leave Cristobal (Panama) and within a week be in any part of the United States, even far across the line into Canada; that should any rare and unusual infection develop, the case might at least become puzzling and damaging before the true nature was discovered.

TUBERCULOSIS

Edited by L. J. Moorman, M.D.
912 Medical Arts Bldg., Oklahoma City

The Relation of Milk to Tuberculosis, by William H. Park, The American Review of Tuberculosis, April, 1927.

Statistics on the incidence of the bovine type of tuberculosis infection among humans vary widely depending on the locality studied, the location of the disease in the body and the age of the infected individual. The greater number of cases of bovine infection are found in children under sixteen and more in the group under five years of age than in the older one. Most of these cases are abdominal tuberculosis, tuberculosis meningitis, cervical adenitis and bone and joint tuberculosis. Very little pulmonary tuberculosis is caused by bovine type bacilli. While there is some evidence of the bovine type of bacilli changing in the human body to the human type it is not conclusive and so far this transformation has not been proven.

Tuberculosis of cattle is wide spread in Europe and America—about one cow in every three reacting to tuberculin. In a recent test made by the author in New York City 100 specimens of certified milk showed no infection; 100 specimens of ordinary milk showed tubercle bacilli in 20 per cent before pasteurization; no bacilli were found after pasteurization. Pasteuri-

zation of milk, cheese and butter adequately protects humans from bovine infection while the addition of orange juice and cod liver oil to the diet of infants provides them with the necessary food elements. These measures greatly decrease the amount of bovine infection in a community.

While there is some relation between human and bovine tuberculosis and certain forms of the disease are lessened by control of herds and pasteurization of dairy products, there is a far more marked and important relation between the mortality from human tuberculosis in adults and the amount of disease existing among infants and young children.

Eradication of tuberculosis among cattle is a difficult and expensive undertaking and requires constant testing and care to safeguard the herd after it is once freed from infection. It can be accomplished however and is being done in this country with Government aid in paying for the condemned cattle. In nine years the percentage of infected cattle in the District of Columbia has been reduced from 18.8 per cent to one per cent. Eradication of tuberculosis from swine is being accomplished at the same time. This work is important from a public health standpoint as well as from that of healthy animal husbandry. Until all herds of cattle are "accredited" however, pasteurization of dairy products remains the most effectual protection of humans from bovine tubercle bacilli.

TUBERCULOSIS INFECTION IN CHILDREN AND ADULTS.

EUGENE L. OPIE.

Journal of the Outdoor Life. May, 1927.

Tuberculosis has long been recognized as contagious and many means have been taken to prevent its spread. Today its prevention rests mainly upon the control of promiscuous spitting and the segregation of the individual expelling the bacilli.

Adequate study of tuberculosis requires a distinction between the disease of infancy and early childhood and that of adolescence and adult life, since, though caused by the same bacilli, they differ widely. Infants are susceptible to infection and it is rarely possible to trace the source of their disease. While there are arguments for the opinion that adult phthisis originates in infancy through the ingestion of bacilli with milk, the intestinal origin of pulmonary tuberculosis has little support at present. Pulmonary tuberculosis in young children tends to involve one part of the lung with its lymph nodes as frequently as another—progresses rapidly to death during the first year of life, shows some slight disposition to heal during the second year with increasing tendency towards healing as age increases. This type of disease resembling the pulmonary tuberculosis of adults may be produced experimentally in animals—a type of disease resembling the pulmonary tuberculosis of adults may be produced in animals however, by inoculating those rendered resistant by a preceding infection. Pulmonary tuberculosis in adults has its origin in the apex, does not involve the adjacent lymph nodes and pursues a chronic course with production of fibrous tissue or the formation of cavities if advanced. The disease has a marked tendency to remain latent, being found at autopsy in one of every five adults dying from other causes. Living bacilli were present in these latent lesions in 76.2 per cent of those examined. One third of the pulmonary apices with no evidence of past or pres-

ent tuberculosis showed living tubercle bacilli and one fourth of the normal pulmonary lymph nodes by animal inoculation were usually in the lung or lymphoid tissue, not in the node itself—living bacilli were recovered in 30 per cent of those examined from lungs with latent apical lesions but in only 8.1 per cent of those from normal lungs. It is assumed that the adult lesion is not derived from the childhood lesion since the focal lesions of childhood are calcified when the adult lesion appears.

Latent tuberculosis both in children and in adults is wide spread and since it is not accompanied by physical signs or symptoms must be discovered by the tuberculin reaction and the x-ray. In families containing one or more members recovered or suffering from pulmonary tuberculosis who have had positive sputum, latent and manifest tuberculosis is very common, in that group of families having members with closed tuberculosis the incidence of latent tuberculosis is still high while in the third group containing suspected cases only the latent disease is no greater than among the non-contact families. Among non-contact families children under ten react to tuberculin in only 30 per cent of the cases and show x-ray evidence in only 10 per cent while in those families with open tuberculosis 80 per cent of the younger children react and 30 per cent showed lesions by x-ray. Schools are now being examined for evidence of extra-familial infection. Tracheo-bronchial tuberculosis demonstrated by x-ray must be regarded as a sign of advanced infection and of grave significance since it is often accompanied by manifest disease—especially in the apex in adolescent children. The tuberculin reaction gives valuable information concerning the activity of the process—an intense reaction showing a progressive lesion, a slight reaction on which is probably healing. Latent apical tuberculosis in adolescent children is also of grave import since it is hard to separate from actual disease recognizable by physical signs and symptoms. The causes determining the occurrence of latent and manifest apical tuberculosis are unknown—in some cases active disease has been present since adolescence—in others it remains latent for years. It has the appearance of a second infection with a long period between infection and actual disease. In a study of marital tuberculosis disease was demonstrated in 10 of 21 cases where one mate had open tuberculosis while it was present in only one in 13 cases with no history of tuberculosis.

In dealing with tuberculosis in the future all infection both latent as well as manifest disease must be taken into consideration since the line between the two is vague and latent disease while it doubtless increases resistance and affords some protection against infection may if neglected become active. Here is one important means of preventing subsequent active disease if this condition be recognized and the individual properly protected.

ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M. D.
717 North Robinson St., Oklahoma City

The Treatment of Old Congenital Dislocation of the Hip, With Special Reference to the Use of Skeletal Traction Before Reduction by Operation, LeRoy C. Abbott, M. D., Archives of Surgery, May 1926, p. 983.

The author reports six cases of dislocation of the hip in children between ten and sixteen years of age. Of these only four were congenital in type. The other two resulted from contractures following anterior poliomyelitis.

Stress is laid on the difficulty in reducing such dislocations because of the contractures of the soft parts and the change in the acetabulum. The first of these difficulties he overcomes by skeletal traction, the latter by open operation. After the hip has been exposed the appearance of the acetabulum and head of the femur determine the exact procedure to be followed.

For some cases Abbott advises arthrodesis, for others he attempts to gain a moveable hip. He leaves one with the impression that reduction followed by ankyloses gives the better functional result.

Removal of Hammertoe by Juxta-Capitular Resection of the Basal Phalanx. Karl Bragard, (Munich). *Ztschr. f. orthop. Chir.*, XLVII, 2, 283, February 15, 1926.

An incision two centimeters long is made on the dorsal surface of the basal phalanx from behind the head of the phalanx upward. From three-eighths to one-half inch of the distal end of the shaft is resected subperiosteally—the planes running slightly from dorsal and proximal to plantar and distal. If necessary a wedge-shaped piece of the shaft may be resected; this allows easy extension of the middle phalanx. The hyper-extended proximal phalangeal joint can be corrected by incision of the dorsal and lateral portion of the capsule of the metacarpal phalangeal joints. A splint with traction on the end of the toes is applied. After ten to twelve days the sutures are removed. Three or four weeks after the osteotomy has healed the patient wears a Lange arch support with anterior convexity to raise the anterior arch.

Wedge Shaped Vertebrae and Paralysis. H. Salis, Basel. *Ztschr. f. orthop. Chir.*, XLVII, 2, 275, February 15, 1926.

The author reports a case of paralysis of the right hand with advanced muscular torticollis of the right side and congenital scoliosis due to wedge formation of the seventh cervical and fourth dorsal vertebrae. The literature on the subject is reviewed extensively. He believes that cervical scoliosis was responsible for the paralysis of the right arm as well as the existing Horner's syndrome by virtue of the pressure upon the cervical nerve roots and the sympathetic nerve. It was treated by redressment of the torticollis followed by a collar.

Progressive Deafness: The Causative Factors and Specific Diagnosis. Drury, D. W.: *Laryngoscope* 1926, xxxvi, 545.

Progressive Deafness: The General Diagnosis of Certain Causative Factors. Rowe, A. W.: *Laryngoscope*, 1926, xxxvi, 551.

Drury states that for a positive diagnosis of otosclerosis several independent examinations of the patient should be made. He has noted the consistency of the anatomical findings with the clinical variations of the condition. In a large percentage of cases of otosclerosis's endocrine dysfunction is a causative factor. Attention is called to the importance of studying presclerotic cases in otosclerotic families.

Rowe emphasizes the necessity for a correct diagnosis in the treatment of otosclerosis. The causative factors should be carefully considered. Of importance among these are the endocrine glands. Interference with the function of the endocrine glands leads to constitutional disturbances which in turn interfere with the hearing apparatus, causing both functional and organic impairment.

Displacement Irrigation of the Nasal Sinuses: A New Procedure in Diagnosis and Conservative Treatment. Proetz, A. W.: Arch. Otolaryngol., 1926, iv, 1.

The author describes a method of introducing fluids into the posterior series of accessory nasal sinuses without trauma which may be used for treatment or diagnosis.

The patient is placed in the supine position with his head projecting beyond the top of the chair and with the occipito-atloid joint extended until the tip of the chin and the external auditory meati are in the same vertical plane. A V-shaped pocket is thus formed at the juncture of the face of the sphenoid with the cribriform plate of the ethmoid.

Fluid which is then allowed to flow into the nostrils from a syringe comes to rest in this pocket, submerging the ostia of the posterior sinuses. Gentle suction (not of 3 lbs.) is applied intermittently to one nostril, the other being closed and the palate and tongue being held in the "K" position. The suction is repeated until the sinus is full (about a dozen times), when the patient is returned to the erect position and the fluid left in the sinus for an indefinite period ranging from eight hours to several days.

In some cases it may be necessary to shrink the membrane with a mild astringent fluid before instituting the treatment. There is no danger that the fluid will enter the eustachian tubes.

In all cases treated by the author, physiological sodium chloride solution was used, the object being merely to dilute the retained secretion and clear the ostia. In every instance improvement resulted. The treatment was repeated at intervals ranging from three to eight days.

In the use of the described procedure for diagnosis the sinuses are filled with iodized oil and stereoscopic roentgenograms then made. Thickened or polypoid membrane may be recognized from the filling defect.

**BACTERIOLOGY, PATHOLOGY
and PUBLIC HEALTH**

Edited by Drs. L. A. Turley and Gayfree
Ellison, Norman, Oklahoma

Irregularities in the Test for B. Coli in Water;
Rudolph E. Thompson, Journal Bact., March,
1927, p. 209.

In the B. Coli test of water there are many positive tests which fail to reveal the presence of B. Coli group of organisms when subsequently subjected to the usual confirmatory test.

These failures to confirm appear to be of two types:

(1) The presence of aerobic spore forming lactose fermenting bacteria and to gas producing symbiotic groups.

(2) Those in which colon group bacteria were originally present and lost in the confirmatory procedure. The first of these do not effect the reliability of the completed test, whereas in the second type, in which a negative result is recorded for a tube actually positive may lead to errors of considerable magnitude.

This second type is probably caused by the production of a lethal hydrogen ion concentration in the standard lactose broth since it is known that under polluted water conditions the growth of colon bacteria in standard lactose broth produces an acidity which is destructive to this group of organisms. These failures due to the production of a lethal hydrogen ion concentration may be largely eliminated by increasing the buffering capacity of the presumptive medium by the addition of dipotassium phosphate and thus prevent the production of a lethal hydrogen ion concentration in the medium.

It is pointed out that while it is generally known that B. Coli is inhibited by the acidity of its own growth in carbohydrate media this fact does not seem to have been seriously considered as a factor in the failure of presumptive tests to confirm.

Seasonal Incidence of Hemolytic Streptococcus in the Nose and Throat in a Surgical Personell; Significance of Masking During Operation.
Frank Lamont Meleney, M. D. Journal American Medical Association—Vol. 88, No. 18, p. 1392, April 30, 1927.

A report on the incidence of hemolytic streptococcus in the nose and throat of the operating personell of the Columbia University College of Physicians and Surgeons and the Presbyterian Hospital, New York.

In 1925 a series of severe streptococcus infections in clean wounds occurred in the Presbyterian Hospital and the results of an investigation of the source of these infections was reported in Surgery, Gynecology and Obstetrics, p. 43, 328, 342, Sept., 1926.

In this study it was demonstrated that the instrument nurse who assisted in the operations was a streptococcus carrier, and also that 33 per cent of the personell of the operating staff carried streptococci.

As a result this study of the seasonal incidence of streptococcus infection in the nose and throat of the operating room personell was undertaken.

It is well known that many virulent microorganisms are expelled from the nose and throat in droplet spray, and also probably from dry organisms on the hairs in the nose.

In this study the following technique was carried out:

A cotton swab was rubbed on the tonsils, fauces and pharynx, and spread over blood agar plates. Another cotton swab was passed into the nose as far as the turbinates and likewise spread over a blood agar plate. After twenty-four hours incubation, all hemolytic colonies were fished, transferred to blood agar, and identified. Cultures were taken every month for one year from all of the personell, as surgeons, assistants, anesthetists, nurses, and orderlies. The number of persons examined varied from 28 to 36 per month, a total of 326 examinations on 125 individuals.

Results are shown in three graphic charts which show, first, that the incidence of streptococcus infections in all wounds is greatly increased during the months of February, March,

April, and May, while the lowest curve is from July to January; second, that during the same period, the incidence of hemolytic streptococcus in the nose and throat of the operating room personell was the greatest; third, that by the complete masking of the operating room personell the occurrence of streptococcus infections in clean wounds was practically eliminated; fourth, of the 125 persons examined positive hemolytic streptococcus cultures were found in 27 at one time or another. The incidence of positive hemolytic streptococci was much higher in surgeons than in nurses. "Cultures from nineteen of fifty-seven physicians were positive, while only eight of seventy-two nurses carried organisms." Twelve of the 77 positives showed positive cultures on two or more successive examinations. One physician had positive throat cultures for seven consecutive months, another gave positive cultures in four out of five, another, five out of six examinations.

The higher incidence of streptococcus among physicians is thought to be due to more frequent exposure to the infection.

One of the most important observations was made during this study. From January, 1925, to May, 1925, the operating room personell did not wear masks. During each of these months from one to two cases of streptococcus infections in clean wounds occurred. From the last of May to December, 1926, the wearing of masks by the operating room personell was rigidly enforced. During that time, only one case of infection occurred. (Feb., 1926) in clean wounds.

The author does not claim that hemolytic streptococcus infections in clean wounds are always due to contamination from the nose and throat but that it is an important factor, and that the wearing of masks by the entire operating room personell will reduce the incidence of these infections to a minimum.

The Value of Mixed Vaccines in the Prevention of the Common Cold.—Ferguson, F. R., Davey, A. F. C., and Topley, W. W. C., *Journal of Hygiene*, Vol. 26, No. 1, Pg. 98-109, March, 1927.

The common cold may appear to be a trivial constituent of the mass of acute respiratory diseases, but it is one of the most pressing and difficult problems in preventative medicine. The loss of time, incapacity, and the possibility of the common cold being the precursor to more serious trouble make this illness a more or less important subject.

The present study was instituted in order to learn if the present prophylactic inoculations against colds were of any value when put to an adequate test. The inquiry was carried out in the University of Manchester during the winter of 1924-25. Volunteers were asked for among the students and institutional staff. A total of 286 persons were under observation, grouped as follows:

The group of 68 inoculated and 72 uninoculated or controls selected at random. A group of 70 inoculated and 74 uninoculated controls with the expressed wish of the individuals to be either vaccinated or serve as controls. That is, there were 138 inoculated individuals and 148 controls.

Each person was given a card on which an accurate record of the colds, the severity of the cold and duration of incapacity was kept. The vaccine employed was one widely used in England.

M. Catawhalis	200 M
B. Septus	200 M
B. Hoffmani	200 M
B. Friedlander	200 M
Staphylococcus Mixed	200 M
Pneumococcus	40 M
Streptococcus Polyv.	40 M
B. Pfeiffer	120 M

Each inoculated individual received three injections a week apart of 0.25 c.c., 0.5 c.c., and 1 c.c., respectively. The local and general reactions were mostly trivial. The completed inoculations were given from October 24 to November 26, 1924. The records were kept of all individuals until May 31, 1925. The results of the study are shown in the following tables:

Table I. Showing frequency among the inoculated and the uninoculated during experimental period.

Number of persons at risk, inoculated, 138; having one or more colds, 78.3 per cent; having two or more colds, 47.1 per cent; having three or more colds 17.4 per cent; having four or more colds, 3.6 per cent; having five or more colds, 0.7 per cent.

Number of persons at risk, uninoculated, 148; having one or more colds, 70.3 per cent; having two or more colds, 31.1 per cent; having three or more colds, 10.8 per cent; having four or more colds, 1.4 per cent; having five or more colds, 0.0 per cent.

Table II. Showing the number of recorded colds, and the mean number of colds per person, among inoculated and uninoculated.

Number of persons at risk, inoculated, 138; total recorded colds, 203; mean number of colds per person, 1.47. Number of persons at risk, uninoculated, 148; total recorded colds, 168; mean number of colds per person, 1.14.

Table III. Showing the results of various methods of estimating the severity of the colds among the inoculated (203 colds) and the uninoculated (168 colds).

	Inoculated	Uninoculated
(a) Mean duration of colds in days, limited to 30 days	13.0	10.7
(b) Percentage of colds associated with a temperature of 99 degrees F. or over, lasting for one or more days	25.1	19.0
(c) Percentage of colds in which the patient remained in bed one or more days	19.2	25.0
(d) Percentage of colds in which the patient remained in doors for one or more days	26.6	27.6

From a study of these charts it is apparent that the frequency of colds and the severity of the colds was greater among the inoculated than the uninoculated individuals.

It may be argued that the group of individuals that volunteered for inoculations were more susceptible to colds than those that volunteered for controls. The figures do not show this to be a fact as there was a group of 68 inoculated persons selected at random, with 72 controls. Among these there were more colds than among those that had preferred inoculation.

The observations made in this investigation correspond very closely with those completed by the American investigation reported in 1921 by Vol Sholly & Park and Jordan & Sharp, in the following table.

TABLE VIII.

Authority	Inoculated No. of Risks	Inoculated Contracting One or More Colds	Per centage Attacked
Von Sholly & Park.....	1327	766	57.7
Jordan & Sharp.....	448	246	54.9

Authority	Controls		
	No. of Risks	Uninoculated Contracting One or More Colds	Per centage Attacked
Von Sholly & Park.....	3025	1156	38.2
Jordan & Sharp.....	461	238	51.6

The American investigators used a different mixture of stock vaccines, one commonly used in America.

B. Influenza	1000 M per c.c.
Strep. Hemolyticus	1000 M per c.c.
Strep. Viridius	1000 M per c.c.
Pneumococcus, Types I, II, III	5000 M per c.c.

The conclusions of these investigations may be summed up as follows:

1. The available evidence suggests that it is futile to hope for a reduction in the incidence of common colds in the population at large, as a result of prophylactic inoculation of any of the stock vaccines now available.

2. It is doubtful if the inoculations do harm.

3. The effort to discover some means of prophylactic inoculation against common colds should continue.

"We would add a word of warning with regard to the utter uselessness of the reports of individual patients as evidence of efficient prophylaxis. Among a large population, some persons will experience fewer colds during any particular winter, than they experienced in previous years. Several of the volunteers in the present inquiry were quite convinced that they had received definite benefit from the inoculations. Jordan and Sharp record similar happenings, and we would echo their comment—'Satisfied patients' conclusions differ widely from those of controlled statistics."

UROLOGY and SYPHILOLOGY

Edited by Rex Bolend, B.S., M.D.
1010 Medical Arts Building, Oklahoma City.

Clippings From Urologic and Cutaneous Review.

Never wait for a positive Wassermann reaction if the Treponemata can be demonstrated by darkfield.

Do not attempt to salvage a cloudy solution of an arsphenamine; better throw it away rather than risk disaster.

Syphilitics over fifty years of age should not be treated vigorously even if they have a four plus Wassermann.

A transitory pruritus ani in the summer months may be due to eating too much of the pastes such as macaroni and spaghetti.

A stinking ulcer of the scalp is almost always syphilitic, though it may not have all the characteristics of a syphilitic ulcer.

"Retention Catheterization Of The Ureters."

Wagner, in Archiv fur Klinische Chirurgie, says that retention catheterization of the ureters, that is, drainage of the renal pelvis for one or several days or weeks has been recommended by French urologists for a long time. In Germany, however, it has been advocated only by Stoeckel, and Casper and Zuckerkandl have warned against it because of the associated danger of subsequent hemorrhage, pain and other

complications. Wagner has tried it in thirty-four cases—cases of pyelitis of pregnancy, post-operative cases, and cases of pyohydronephrosis—with very good results.

In pyelitis of pregnancy it was used after failure of the usual treatment. In three cases the result was excellent; in one case the ureteral catheter was left in place for three days and in another for seven days without any apparent disturbance. In one case the catheterization was continued with interruptions for twenty-three days on each side, but was without benefit and a cure was obtained only after the interruption of the pregnancy. However, this case proved that the procedure is harmless.

Of sixteen cases of pyelitis following a Wertheim hysterectomy in most of which the condition was due to postoperative atony of the bladder, retention catheterization was successful in fourteen. One patient died from a previously existing pyelonephritic abscess, but in no case was there a persisting colon-bacillus bacteriuria. Three obstinate cases of pyelitis following vaginal operations and one case following an oophorectomy were cured by the treatment. Recovery resulted also in three cases of constriction of the ureter by cicatrices or a recurring carcinoma and in a case of staphylococcus pyelitis.

The procedure was especially beneficial in pyohydronephrosis due to nephroptosis. In a case of this type a tumor on the left side as large as a child's head, which corresponded to the dilated renal pelvis, disappeared permanently following catheterization for thirty hours. A cure was also effected in cases of ureteral fistula following myomectomy and Wertheim's hysterectomy.

Retention catheterization has not proved of value in diagnosis as the immediate fall in the temperature which occurs after the treatment in simple pyelitis has been noted also in tuberculosis.

The above is interesting to urologists for the reason that occasionally we come across surgical accidents of some kind for which we would like to put the bladder at rest and usually the thought of a prolonged retention ureteral catheterization meets with more or less objections from the surgeon.

"URETERAL STRICTURE IN MALE AND FEMALE."

In Surgery, Gynecology and Obstetrics, Tolson says that ureteral stricture is a common pathological condition that should be of interest to every medical man. Patients suffering with this lesion are frequently seen by every active physician whether he be engaged in general medicine, or one of the specialties.

Usually these patients first consult the family physician, for this reason those doing general medicine should be particularly interested in the symptoms and diagnostic features of ureteral stricture. Pain in the abdomen or back is the most frequent chief complaint, and consequently many patients with ureteral stricture are referred to the general surgeon. On account of pain in the pelvic region, backache and dysmenorrhea, many of them go to the gynecologists. Stricture patients usually have an exacerbation of symptoms during pregnancy, and obstetricians have to deal with the condition. Again, the gastro-intestinal disturbances are the most prominent features and the patients are sent to the gastro-enterologists. Pain due to ureteral stricture is often referred to the sacro-iliac, hip, and thigh regions, and therefore the advice of

the orthopedists is sometimes sought. The ophthalmologists are often called upon to relieve headache, which is frequently a common complaint. Tonsils are the source of infection in a large percentage of ureteral stricture cases, and the services of the laryngologists are necessary to eradicate the focus. Neurologists see many of these patients, who after a long period of suffering have developed neurological symptoms. The ones with renal colic type of pain and prominent urinary symptoms are ordinarily promptly referred to the urologists, who too often on account of the easy passage of plain renal catheters, negative urinary findings, and misinterpretation of X-ray films, turn them over to some other specialist.

As in many other conditions, the effects of ureteral stricture are manifested in various parts and symptoms of the body and the predominating symptoms may be in any of the parts or tracts involved. Prominent symptoms in parts of the body outside the urinary tract have served to direct attention and remedial attack on the effects, and have placed the primary causative pathology so far in the background as to be out of sight in many cases. Even within the urinary tract attention and remedial attack has been largely directed to resulting kidney pathology, such as hydronephrosis, while the primary pathology in the ureter has passed unobserved. The manifestations of ureteral stricture frequently simulate better understood conditions. Moreover, it is quite apparent that a large number of medical men are still unfamiliar with the clinical picture of ureteral stricture, and do not sufficiently appreciate its prevalence and importance. Consequently, it is not surprising to observe that patients with ureteral stricture commonly pass through the hands of many medical men, including surgeons and various specialists, without obtaining relief.

There seems to be a general impression that the symptoms of ureteral stricture are indefinite; that there are no physical findings that suggest the condition, and that the lesion can be diagnosed only by cystoscopic methods. On the contrary, is the firm belief of the author, ureteral stricture has definite symptoms that produce clear-cut clinical pictures; there are physical findings that suggest the lesion and a working or provisional diagnosis can be made in most cases without the aid of cystoscopic methods. Certainly the diagnosis of ureteral obstruction which may be due to a variety of conditions can be readily made, and this is sufficiently exact for a provisional diagnosis.

The treatment the author advances consists of gradual dilatation of the stricture areas, appropriate treatment of the associated pathology in the urinary tract, and lastly but equally as important, the removal of all discernible foci of infection. The author does not state the various methods of ureteral dilatation; but he does state that large bulbs on catheters and bougies can be passed with almost equal facility in the male and female through the McCarthy panendoscope."

The above abstract is quoted verbatim because just now there seems to be a certain reaction from the industrial surgeon, at least, against ureteral kinks, etc. It seems that many damages have been collected by patients from kink ureters which gives the general surgeon some little reason to doubt, especially if these are poorly worked out by the urologist, but when properly checked there is very little to question about this procedure.

EYE, EAR, NOSE and THROAT

Edited by Jas. C. Braswell, M. D.
726 Mayo Bldg., Tulsa

Adenoids and the Pharyngeal Bursa: Their Structure and Morphology., Lemere, H. B.: Nebraska State M. J., 1925, x, 453.

The author reports the case of a patient who complained of a "stopped up" feeling in her head and who was found to have a large boggy swelling in the nasopharynx. When the mass was lanced through the nose, thick yellow pus with a foul odor escaped under pressure. When the sac refilled, it was removed under direct inspection by raising the palate and using a snare at the base.

The author is of the opinion that unless adenoids are removed completely, trouble may be caused by re-infection. In the removal of adenoids care must be taken to prevent injury of the surrounding tissues as scar formation destroys the glands and leads to dryness of the nasopharynx later in life.

The literature on the pharyngeal bursa is reviewed.

Radium Therapy in Diseases of the Eye and Adnexa., Robinson, G. A.: Arch. Ophth., 1926, lv, 328.

The author has used radium with remarkable success in the treatment of angiomas, papillomas, epidermoid carcinomas, lymphomas, peritheliomas, intra-ocular tumors (glioma and melanoma), orbital tumors (sarcoma and angiosarcoma), and vernal conjunctivitis. He has seen two cases of cataract following the use of large doses of radium. In one, that of a diabetic patient, a secondary glaucoma developed and enucleation of the eye became necessary. He draws the following conclusions:

1. Radium irradiation is the treatment of choice for angiomas, vernal conjunctivitis, epidermoid, carcinoma of the eyelids and early carcinoma of the bulb.

2. It is indicated as a postoperative measure in cases of primary intra-ocular tumors and should be first choice for primary orbital tumors.

3. To determine the status of radium in the treatment of diseases of the eye and its adnexa, careful methods of irradiation and closer cooperation between the radiologist and ophthalmologist are necessary.

The Intranasal Lachrymal Sac Operation: Its Advantages and Its Results. West, J. M.: Arch. Ophth., 1926, lv, 351.

The treatment of dacryostenosis has made little progress. The sac is irrigated, the duct is probed, and eventually the sac and, in some clinics, the lachrymal gland are removed externally. Under the present regime, fistula and phlegmon have a very poor prognosis, even when the treatment is long continued. Attempts have been made to establish a permanent connection between the conjunctival sac and the nose through an external incision, intranasally, from the maxillary antrum and through the mouth. The high incidence of failure of Toti's operation of dacryocystorhinostomy must be due to the external incision, which disturbs the relations of the canaliculi and internal ligament. An intranasal opera-

tion is applicable to all types of cases and is curative in 90 per cent.

The author has done the intranasal operation 1600 times. Local anaesthesia is used. The nasal mucous membrane is incised and a large flap turned aside over the inferior turbinate to expose the bony wall from the pyriform apparatus to the posterior boundary of the lachrymal fossa. The sac is then exposed by removing this wall with chisels. The nasal end of the sac may be incised or the sac removed entirely. The mucous membrane is then replaced and the nose packed. The artificial opening rarely closes as it becomes lined by epithelium from the canaliculi. After this procedure pathogenic bacteria leave the conjunctival sac within one or two days, whereas after external removal of the sac pneumococci may remain for several days.

The advantages of the intranasal operation are summarized as follows:

1. The internal operation is more reliable as a cure for suppurative of the lachrymal sac than the external procedure.

2. It re-establishes the physiological function of the lachrymal apparatus so that not only a dacryocystitis, a lachrymal fistula, or a phlegmon is cured, but subsequently the tears drain off into the nose and the troublesome epiphora is avoided. The re-establishment of drainage removes simple epiphora of nasal duct origin.

3. The re-establishment of drainage from the eye into the nose causes the disappearance of the pathogenic bacteria from the conjunctiva, which is very important when future intrabulbar operations are indicated.

4. A prolonged and usually painful and unsuccessful treatment with probes is avoided.

5. Removal of the lachrymal glands is rendered unnecessary.

6. An external incision or curettage necessitating an external bandage and other disadvantages is avoided.

7. In cases of fistula and phlegmon the patient is spared the troublesome and painful changing of dressings which is necessary after the external incision.

8. The entire treatment is usually completed in about a week.

9. The operation is not trying upon the patient and if performed under local anaesthesia in the cases of children as well as those of adults. Usually the day following the operation there is scarcely any swelling of the face and bandaging of the eye is unnecessary.

The Removal of Cataract with the Capsule. Licsko, A.: *Brit. J. Ophth.*, 1926, x, 485.

In using a capsule forceps in the usual extracapsular extraction the author noted that sometimes the capsule was not torn but the lens was dislocated. This was due to the use of a dull capsule forceps. Accordingly, Licsko had a Shulek forceps made with blunt teeth. In his operation the usual preparation is given and the eye is fixed by a suture through the superior rectus. The incision is made longer than one-third of the cornea, and a large conjunctival flap is formed and folded over the cornea. An iridectomy is then performed, the lens capsule is seized with the dull forceps, slightly above the equator, and lateral movements are made to rupture the zonule and draw the lens into the wound. At the same time sufficient pressure is exerted from below upward with a Shulek annular expressor to allow

the operator to "feel the elasticity of the vitreous." After the removal of the lens, the usual toilet of the eye is completed. Both eyes are kept bandaged for one day and the eye operated upon is bandaged for five days.

Licsko has performed 204 operations of this type. A successful result was obtained at first in 30 per cent and later in 50 per cent. In the others, the ordinary capsulotomy operation was carried out because the loss of vitreous was feared after the new technique had been tried. Vitreous was lost in only one case, and in this instance the loss occurred while the section was being made in a complicated cataract. Two other patients squeezed vitreous out after the operation, and one of these developed the only postoperative infection in the series.

In forty-eight of sixty-one cases ultimate vision was 5-5 to 5-10; in six 5-15 to 5-30; and in three 5-30 to 5-70. In two cases of high myopia and two of complicated cataract, vision was less than 5-70.

Some Fundamental Points in the Diagnosis and Treatment of Ethmoid Disease: Heitger, J. D., *J. Indiana State M. Ass.*, 1926, xix, 5.

Pathological changes of the ethmoid involve the mucous membrane and the bone. Hajek divides them into: (1) inflammations of the superficial layers, (2) deep inflammations affecting the soft parts between the bony trabeculae, and (3) bone involvement affecting the middle turbinate and involving the mucous membrane, periosteum, bone, and medullary substance.

The author states that ethmoiditis begins as a surface process and extends into the deeper structures later; the reverse has not been observed.

Polyp formation around the openings of the sinuses is due to an inflammation of the mucous membrane where it is thin. In some cases polyps may recur after surgical intervention as the result of irritation caused by pus in the sinuses. In other cases they may recur from the membrane within the sinuses or as the result of involvement of the bony trabeculae and medullary substance after the membrane has been removed.

In the diagnosis of nasal sinus disease the findings of the clinical, X-ray, and transillumination examinations, the history, and the symptoms must be considered.

Ethmoid disease is non-suppurative or suppurative. In the former, the diagnosis depends upon anterior and median rhinoscopy and the use of probes for the anterior and middle cells and on posterior rhinoscopy for the posterior cells. In suppurative cases it is necessary to exclude the antrum and sphenoid as sources of the pus.

In acute cases of ethmoiditis local treatment will suffice unless there are anatomical conditions which interfere with proper ventilation and drainage. In mild cases surgical correction of anatomical obstructions may result in a cure. In the average case, repeated conservative surgical attacks give better end-results than an attempt to remove the entire ethmoid at one sitting. Certain morphological and pathological variations prevent a complete cure by any means.

The Problem of Bringing Forward the Retracted Upper Lip and Nose: Blair, V. P., *Surg., Gynec. & Obst.*, 1926, xlii, 128.

The author's cases of retracted lip and nose have been observed to fall into three etiological

groups: first, those in which the deformity is apparently of natural occurrence; second, those in which it is due to loss of the bony foundation of the lip or nose or of both resulting from trauma or disease; and third, those in which it has followed the repair of a harelip or cleft palate. In some cases a markedly shortened nasal mucous membrane has suggested that infantile snuffles may have been a causative influence. In one case in the second group the deformity resulted from the injudicious use of radium.

The abnormal anatomy causing the deformities varies in different cases and must be considered in the planning of the corrective measures. There are two general plans of correction. In one, the deficient maxilla is built out, the retracted soft tissues being thus pushed forward. In the other, the soft tissues are drawn forward and fixed in this position. In some cases a combination of the two plans will give the best results.

The methods of building out the bone have been: (1) the use of a dental prosthesis, (2) orthodontic treatment, and (3) cartilage transplantation. In any of these methods it may be necessary to loosen and suture the soft parts forward, deepen and line the sulcus with Thiersch grafts, or lengthen the nasal tube with a flap from the forehead, the arm, or the mucosa of the mouth.

In some cases a very satisfactory correction has been obtained by a method devised by the author, which consists in freeing the cheeks from the maxilla and the columella from the septum and then suturing the cheeks forward on the maxilla and the liberated columella in a forward position on the lower border of the septum.

In some cases the columella may require lengthening, and if the external nose is very small it may be necessary to piece out the covering as well as the lining.

The article contains numerous illustrations.

PROTEIN SENSITIZATION

At the beginning of the twentieth century practically nothing was known about protein sensitization, as such, though the phenomenon itself had been frequently observed. Its most common manifestation not only before that time, but since, has been in the form of so-called hay-fever or pollinosis; but this disturbance is only a type of a constitutional anomaly of a much wider scope, covering, for example, a great variety of food substances, irritating dusts, and animal emanations.

The symptoms of protein sensitization are not specifically indicative of the etiology. Any number of proteins may produce identical symptoms. It becomes necessary, therefore, in any case of hay fever, asthma, urticaria, eczema, gastric disorder or intestinal colic that is not otherwise explicable, to test the patient's susceptibility to one or more of the proteins to which he is exposed.

Protein extracts for this purpose are offered by a number of manufacturers, all embodying, of course, the same principle, but differing in form. Since the tests are made by scarifying the skin and applying the extract in small quantity, as in vaccination, it would seem that the best form of protein extract for this use would

be a semifluid product, rather than liquid or powder.

This thought has occurred to Parke, Davis & Co., who offer 194 diagnostic protein extracts in glycerin-boric acid paste form, for convenient application. The extracts are obtainable singly and in groups. See the advertisement in this issue entitled "Parke, Davis & Company's Diagnostic Protein Extracts."

A SCENE IN "LOST RIVER VALLEY"

French Lick Springs Hotel, Indiana, is now in mid-season, with horseback riding, golf, and other recreations vying with each other in popularity. Many visitors go to French Lick for the mineral waters that abound there in the region so well known as the "Lost River Valley." It is a picturesque as well as an historical section about which books have been written. But the healthful climate and the mineral waters continue to be the chief attraction for thousands of visitors each year. The beautiful gardens and surroundings of French Lick Springs Hotel bespeak the peaceful and healthful atmosphere which prevails there. The percentage of illness is considerably less there than in other cities, towns and villages of Indiana. Still the authorities provide for those who may be sick. Dr. A. H. Harold, an experienced physician of Indianapolis, has recently accepted the position as Medical Director at French Lick Springs Hotel.

TETANUS

It is becoming easier than ever before to give a child a hypodermic of Tetanus Antitoxin, now that this biological product has been purified and concentrated to such an extent that 1500 units (the prophylactic dose) resembles nothing so much as a few drops of pure water. Vast improvements have been made in the physical properties of Tetanus Antitoxin since the product was first made available to the profession, and with this improvement in form has gone a constantly increasing use in caring for suspicious wounds.

Doses as high as 20,000 units, for treatment, are now offered, in a volume no larger than that of the 10,000 unit dose of a few years ago; and from this point down to a 3,000 dose.

See the advertisement in this issue headed "Tetanus Antitoxin (P. D. & C.)—Potent, Refined, Concentrated." It will well repay perusal.

ALOE'S REMOVAL

The well-known surgical supply house of A. S. Aloe Company in St. Louis has been crowded out of their contracted quarters at 513 Olive Street, (the optical store remains there) and are now located in the new Aloe Surgical Building at 1819-23 Olive Street—only three blocks from the Union Station. The removal was necessitated by lack of downtown parking facilities and the growth of their surgical business which required larger and better quarters. Visiting physicians should take note of the new location near the railway center.

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NOTE— Corrections and additions to the above list will be cheerfully accepted.

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USES AND ABUSES OF INSULIN*

LEA A. REILY, M.D.
OKLAHOMA CITY

The hospital ought to be a school where the diabetic, under the careful supervision of a trained dietitian should be taught the elements of dietetics and given the practical instruction of weighing and measuring the food that she or he must necessarily follow, the number of calories of food which is necessary for keeping anabolism and katabolism equal and the amount of proteids per kilo to replace the nitrogen waste. How fortunate it is that the system of proper feeding was scientifically worked out by our biochemists and put to a practical account by our clinicians before insulin was discovered, as properly balanced diet is the fundamental principal in the management of diabetes and should even be more thoroughly understood if the tolerance is so low as to necessitate insulin usage.

The administration of insulin requires intelligence not only of the patient but also of the physician. The patient should be capable of giving himself a hypodermic and of testing the urine qualitatively for sugar unless he can afford these services for the rest of his life. Cases that show glucosuria but none of the other symptoms are not suitable for treatment until thorough investigation has shown it to be necessary. Many of these cases show renal glycosuria and are controlled by dieting at this stage. Cases of renal glycosuria and mild diabetes must be carefully differentiated, cases of diabetes complicated by hypertension, myocardial degeneration and nephritis are better left untreated with insulin. Its value in the senile is doubtful.

Hence we are firmly convinced that people are learning that diseases of metabolism, like diabetes, should be hospitalized with just as much, (if not more) reason

than surgical cases. It is essential to observe them, measuring their intake, their blood sugar, their urinary output, both as to amount and chemical consistency. All focal infections must be removed, constipation must be corrected. Young and nervous patients may be given a little bromide, all extraneous emotional disturbances must be eradicated as much as possible. The moderate accuracy with which you can figure out the basal maintenance, the amount of food to be given, the ration of proteid, carbohydrate and fats, i.e. the ketogenic antiketogenic ratio, to keep the anabolic and katabolic processes in unison is quite as definite as figuring up the miles one gallon of gasoline will produce with a certain motor or the tons of coal to carry a ship from one port to another.

The ability to check up the loss of energy and waste of material in the glucose spilling through the kidneys and lost to body needs represents a great economic loss unless it is checked by accurate methods of adjusting your food ratio or supplying insulin to cause it to be utilized in the body.

Now, treating diabetes is like treating tuberculosis and they have many things in comparison. In the first place, a diabetic like a tubercular should begin his treatment before the islands of Langerhans are materially injured and one is condemned to a life of continuously using insulin. These cases taken in time are relieved by diet and very frequently increase the carbohydrate tolerance wonderfully. The greater percentage of diabetics do not need insulin if the patient is one who can govern his appetite and not get acute infections. Now the greater number of people who are not only diabetics but potential diabetics who are suddenly confronted with some of the grave complications of diabetes without knowing they are such is a reflection upon the profession of a given community. The incidence of diabetes is generally increasing in numbers until at this time it is a very formidable economic problem for our hospitals as well as those whose management can be satisfactorily accomplished in their homes. Diabetes has

*Read before the Section on General Medicine, Neurology, Pathology and Bacteriology, Annual Meeting, Oklahoma State Medical Association, Muskogee, May, 1927.

increased as a cause of death from twentieth place a few years ago until now it ranks twelfth. The death rate in Philadelphia was five times more in 1924 than in 1880 (Anders). In 1903 there were more men than women, while in 1924 more women than men. Why, because (1) a century ago the annual consumption of sugar per capita was 5 pounds, 50 years ago it was 25 pounds, today it is over 100 pounds. (2) We are continuously living under a nervous strain and are not given to repose. (3) We are becoming obese with it diabetic potentially. (4) We are saving our youth from acute disease and condemning them to more chronic ones in after life as the expectancy of life of man is 58 instead of 38 twenty years ago, and the older you grow the greater chance for diabetes. Joslin shows that 51 per cent of the cases of diabetes occur between the ages of 50 and 70 years. He very facetiously remarks that we are saving youth from sudden deaths and condemning them to more prolonged death. (5) Medical men are more thorough in their examinations and necessarily pick up more cases of diabetes. The number of cases in a given community is in direct proportion to the alertness of the physicians in these communities.

The great tendency now to give insulin to the diabetic before they are worked out as to their tolerance is a great injustice to the patient as many a person with proper scientific study can so adjust their dietary, and if properly adhered to, can avert the necessity of the daily hypodermics of insulin.

We find children very adept at learning to weigh and measure their food. We have had several children who took great delight in teaching the older people how to compute their menus and proved very valuable help in the management of the metabolism cases. We find they all get interested in their work and if let alone by some good-hearted but ignorant advisor who suggests that a little of this or that will not hurt them, they do well and can go home and take up their previous means of livelihood and not become charges on the county or relatives. A diabetic's efficiency is not so very much impaired and does not have to be classed as invalid but can carry on his business and fill his place in society if he will adhere strictly to the proper manner of living. The psychology of the average diabetic is not changed if he finds he can

carry on as his more fortunate companions.

The unfortunate thing about the diet of a diabetic is that it costs about twice as much as the average hospital patient, as vegetables and meats, fats, etc., are much more expensive than the ordinary carbohydrate food which is so prominent in the ordinary dietary.

This can be helped by the ingenuity of the patient if he has his own garden and hot beds and rotates his crops. By this means in this climate there are very few months but what he can have a good assortment of green vegetables even if not near to a good market.

The essentials of a diabetic diet are as follows:

(1) It must be tolerable, must admit of a certain variety and correspond as far as possible with the desires and habits of the patient.

(2) It must possess a sufficient caloric value—about 30 to 35 calories per kilogram of body weight suffices for a man to do light work.

(3) It must contain sufficient protein to maintain nitrogenous equilibrium. About 1 to 1.5 gm. of protein per kilogram of body weight suffices.

(4) The total amount of glucose must be reduced to that which the body can utilize by means of the pancreatic secretion either alone or with the aid of insulin. The total glucose is represented by the sum of the carbohydrate plus .58 of the protein plus .1 of the fat.

(5) The total fatty acids must not exceed that amount which can be absorbed into the metabolism without the production of acidosis. The amount of fatty acid equals .9 of the fat plus .45 of the protein. Woodyatt uses the formula of $F. - 2C$ plus P . Thompson uses the formula of $F. - 3C$ plus P . Neuburgh and Marsh use even higher fat formulas.

After establishing your patient's diet and tolerance it is an easy matter to tell whether he is getting any food from other sources because then sugar immediately spills through. Hence the treatment of diabetes is as open as a game of cards played with the faces all up. The patient can easily tell if he is not being given the right management for sugar will appear in the urine, while on the other hand if the patient filches food you needn't ask him if he has done it, but

merely what he has eaten and he cannot deny it. So neither the physician nor patient can put it over one another.

There is yet no positive evidence that treatment with insulin will arrest the diabetic process by restoring the patient's antidiabetic function. In the milder cases in which insulin has been used the evidence is difficult of interpretation because such patients may show very marked improvement in their ability to utilize carbohydrate on dietary regulation alone.

Since it is impossible to prove that insulin can increase tolerance, it is obvious that insulin should be used in the routine treatment of adult diabetes only when they cannot remain sugar free on a maintenance diet without it. And in children, only when they, in the absence of insulin do not remain sugar free on diets yielding sufficient calories for growth. Diabetic children, however, under adequate diet or if helped by use of insulin, maintain their mental and physical growth as well as their less afflicted playmates. One of our diabetic children grew more and became more sturdy than his normal cousin who was the same age and lived under the same roof and under like conditions.

There are several disadvantages in administering insulin where it is not actually needed to supply sufficient calories. Apart from the expense and discomfort of the subcutaneous injections there is a demoralizing effect on the patient from the knowledge of the possession of a drug which has almost miraculous effect on sugar metabolism. Such patients become careless with their diets. A much more serious misuse of insulin is made by physicians who place patients on diets that cause a continued slight glycosuria with the idea of protecting the patient from hypoglycemic reactions. If one hopes to stay the process of the disease one must above all things keep the patient aglycosuric. I have noted the pernicious effect on tolerance of diets whose total glucose equivalent is such that glycosuria is produced for it invites the protean complications which are so common in poorly managed cases. Even more necessary is it to see that you have no acetones in the urine for they show an even more faulty metabolism.

During periods of acute infections it is necessary to either cut down on your food or increase your dosage of insulin for then your tolerance is lowered. Also

when your patient is disturbed by some violent emotions such as fear, anguish, anger or joy, the tolerance is equally lowered. Emotional glycosuria is a condition which can explain many a case of glycosuria which is not truly diabetic.

Some one has proposed the following don'ts for the mild diabetic:

(1) Don't break diet—you are the one who suffers.

(2) Don't overwork, or overplay. Worry and fatigue are borne badly by a diabetic.

(3) Don't neglect the bowels: Cleanliness of the skin is imperative if gangrene and infection are to be avoided.

(4) Don't forget daily test of urine for sugar and diacetic acid.

(5) Don't experiment with new foods—if in doubt ask your physician.

(6) Don't trifle with infections of the throat, chest or skin. They are always serious.

(7) Don't grow fat. You should keep ten pounds under your normal weight

(8) Don't try what Mr. Jones did for diabetes—you are not Mr. Jones, ask your doctor.

(9) Don't grow careless—it is the careful invalid who lives the longest.

(10) When giving glucose intraneously for acidosis or for nourishment do not give insulin with it unless the isletin gland's secretion is adequate for they will ordinarily care for the extra amount of glucose suddenly thrown on the bodily economy.

CASE REPORTS

CHART 1

Mr. E. M. B., white male, 53 years, 136 pounds, brought to hospital in stuporous condition. History of carbuncle on back of his neck for past three months. This had such an extensive area of involvement that it extended from right ear over neck and occiput and in front of left ear so that the ear was hanging merely by the skin of the external auditory meatus. Ocular tension was normal C02 30.

Was given 500 cc glucose 12 per cent with insulin units 50 and next day was able to eat. He was put on all the food he could eat. Surgical side treated the carbuncle with hot boric packs until slough was gone and then mercurochrome and balsam peru with castor oil during

Time	Date	Dose of Insulin	Diet in gms.			Total* Grams Carb.	Total Calor.	Wt.	Blood Sugar	Urine Sugar	Vol.	Acet. Dia.	Alb.	Sp. Gr.
			Carb.	Prot.	Fat									
	9-2-26					with clothing		108		xxx	—	4x-	o	1045
6 P.M. 6 A.M.	9-2-26		47	40	115	82	1383			xxx	400	0-	o	1044
	9-3-26		"	"	"	"	"		23%					
12 hr.	9-3-26					"				xxx	200	tr-	o	1040
12 hr.	9-3-26					"				xxx	900	tr-	o	1037
Day	9-4-26					"				xxx	1000	xx-	o	1034
Night	"		29	37	108	61	1236			x	200	xx-	o	1025
Day	9-5-26		"	"	"	"	"			trace	400	0-	o	1030
Night	9-6-26		"	"	"	"	"			trace	400	0-	o	1022
Night	9-7-26		"	"	"	"	"			trace	1000	0-	o	1027
Night	9-8-26		"	"	"	"	"			o	375	0-	o	1025
12 hr.	9-8-26		"	"	"	"	"			heavy trace	300	0-	o	1032
12 hr.	9-8-26		"	"	"	"	"			o	65	0-	o	1026
6 P.M. 6 A.M.	9-9-26		"	"	"	"	"			o	1000	0-	o	1025
" "	9-10-26		"	"	"	"	"			o	500	0-	o	1020
12 hr.	9-10-26		"	"	"	"	"			o	320	0-	o	1024
	9-11-26		"	"	"	"	"	106	16%	o	700	0-	o	1018
6 P.M. 6 A.M.	9-12-26		"	"	"	"	"			o	800	0-	o	1021
" "	9-12-26		"	"	"	"	"			o	200	tr.	o	1017
Night	9-13-26		"	"	"	"	"			o	400	x-	o	1025
	9-14-26		"	"	"	"	"			o	800	tr-	o	1021
	9-14-26		"	"	"	"	"			o	350	0-	o	1025
			"	"	"	"	"							
12 hr.	9-15-26		"	"	"	"	"			o	300	x-	o	1025
	9-16-26		"	"	"	"	"			o	550	0-	o	1011
	9-16-26		"	"	"	"	"			o	250	0-	o	1024
Night	9-17-26		43	47	131	84	1539	108	.11%	o	650	0-	o	1021
Night	9-18-26		43	47	131	84				o	200	0-	o	1018
Day	9-18-26		43	47	131	84				o	300	0-	o	1017
6 P.M. 6 A.M.	9-18-26		43	47	131	84				o	200	0-	o	1025
Night	9-19-26		43	47	131	84				o	600	0-	o	1020
	9-19-26									o	500	0-	o	1020
	9-20-26									o	400	0-	o	1021
* Figuring Protein converted to 30% and Fat to 10% Carbohydrates.														

the granulating stage. The granulations were healthy and the area 4 x 3 inches healed over by growth of skin from the edges while the urine was sugar free.

The marvelous thing about this case is that it took 315 units a day during the extremely septic stage to control his sugar metabolism, and that later the patient remained sugar free on 5 units, even going away from the hospital and returning with faint trace of sugar. His renal threshold was at about 250 milligrams per 100 cc of blood, possibly due to the

fact that he had nephritis as albumin was frequently found in his urine.

CHART II

Miss L., 18 years, family history negative except that father had always had "indigestion". Obesity or diabetes was negative in family history, but patient had always been quite plump. No infections other than the usual childhood diseases. Maximum weight was 128 lbs. Present weight 108 lbs., 50 kilos.

Had not been feeling well for past few months, tired easily and not interested,

Date	Weight	DIET				URINE				BLOOD		Insulin Units	REMARKS
		Total Calories	Protein Gms.	Fat Gms.	carbo-hydrate Gms.	glucose	acetone	diacetic acid	volume	glucose	co ₂		
7-24-25		ALL FOOD HE WILL EAT				3.1%	0	0	550	566		XV X.0	missing
7-28-25						43	0	0		357		Units	Each Dose
8-3-25						trace	0	0					
8-4-25						trace	0	0	1890	333			
8-5-25						trace	0	0	1900	278		CV X.0.	
8-8-25						None	0	0		230			
8-15-25		50	60	175	2015	None	0	0	1400	267			Hypoglycemic Shock
8-19	133 lbs					None	0	0	1680	290		V	
8-24	137					2%				390			
8-26						trace						0	
8-29	135									189			
9-4	136									180		V X.0.	
9-12	135					2%	0	0	2790				
9-15						2%	0	0		364			
9-16						trace	0	0		256			
9-18						0	0	0		256			
Out of Hospital on No Insulin But Restricted Diet													
9-23	50	60	175			trace	0	0		270			
9-26						0	0	0		250		V X.0.	
10-1						0	0	0		222			
10-6						0	0	0		256			
10-10						0	0	0		256			
10-13						0	0	0		222			
10-22						0	0	0		320			

as was her custom. No aches or pains, no boils, no pruitus, no polyphagia or polydipsia, nocturia 1-2 times. Urine showed sugar 4 plus and acetones 4 plus. Spec. gr. 1045, otherwise negative. Blood sugar 23 per cent.

She was sent to hospital to try her tolerance and teach her the fundamentals of feeding.

Her basal maintenance was 1500 calories, was ordered diet of proteids 40P, COH 50, fats 125. In two days her acetones were gone, her sugar was 2 plus and sp. gr. 1028. Dropped her diet to 20 per cent below her basal maintenance so as to give her pancreas a more complete rest and to render her completely sugar and acetone free. This was accomplished after the fourth day and the blood sugar was .16 per cent and by the end of the week .11 per cent. Her appetite was satisfied with this diet, and she was held for one week at that, when it was gradually increased until her basal maintenance was reached. In this way, even though in a young patient, we averted the use of from one to three hypodermics of insulin a day, and put her on her feet much bet-

ter satisfied and with a better psychology than had she been actually dreading these punctures.

It is quite necessary, in the cases of young, growing persons to keep them well supplied to meet the katabolic processes, so it may be necessary to give her one dose a day if her weight does not keep gradually upward. Under-nutrition for any length of time is weakening and should not be recommended. She was sent home with the advice of keeping her urine absolutely sugar free and cutting down her diet if any acute infections.

EPIDEMIC ENCEPHALITIS*

M. S. GREGORY, M.D.
OKLAHOMA CITY.

Perhaps as good a name for this disease entity is influenzal encephalitis, which term is used by White and Jelliffe in their classical "Nervous Diseases" pub-

*Read before the Section on General Medicine, Neurology, Pathology and Bacteriology, Annual Meeting, Oklahoma State Medical Association, Muskogee, May, 1927.

lished in 1918. This disease has always followed in the wake of influenza.

History shows that influenza first reached America in December, 1889, and during the years 1890 and 1891 swept over the United States, leaving in its wake a great horde of very ill people, having the symptoms of paralysis agitans, tabes, hemichoreas, hemiataxias, hemiplegias, tremors, multiple sclerosis, dementias, lethargies and psychoses. There were also the respiratory types, which are now seen very commonly. Thirty to thirty-five years ago these residuals were described and written about under the terms of hysteria and hysterical tics. And taking the literature of that day into account we see that the sequellae following the influenza epidemic of 1889 are entirely similar and comparable to the sequellae following the influenzal epidemic of 1918. As is common history the last influenzal epidemic reached America in 1918 and since that time a great literature has come into existence describing the many and varied sequellae which are now following this last epidemic of influenza.

As to the virus causing this infectious, but hardly contagious disease, authorities disagree. Strauss and Loewe in this country describe an ultramicroscopic virus which they have isolated from the nose and throat washings of cases of this disease, while Rosenow is of the opinion that he has settled the infective virus as being a certain streptococcus. Freeman of Washington has also isolated a streptococcus from which the Mulford Co. is making a bacterin for injection.

The acute symptoms of this disease may vary from a very slight malaise to very profound symptoms leading to quick death. Many of these patients have only a slight headache for a day or two and then recover. Sometimes they become sleepless for a few nights, and then again go on about their work and appear to be very well for a year, two or three, when they begin to become stiff, rigid and perhaps develop marked tremors, with a loss of winking and a masked face, giving us the picture of paralysis agitans. Again, the initial symptoms may be very severe. They quickly drop into a deep sleep, or rather into a lethargic state and stay there for days, weeks and sometimes months, from which they gradually emerge and after a year appear to be fairly well, only to break

down again, developing many and varied symptoms a year or two later, thus showing the chronicity of this disease. Perhaps there is no disease, not even excepting syphilis, which can give us such varied symptomatology as this disease gives. A very common symptom is the reversal of the sleep rhythm, in that the patient is restless, wakeful and disturbed all night, and sleeps fairly well during the day. Whenever a child or young adult is ill, and is reversing his sleep rhythm in this manner one should always think of encephalitis. Another very common symptom in the early stages is that of double vision, frequent paralysis of the muscles of accommodation and the extra ocular muscles.

Tilney of New York very early gave us the following classification depending upon symptoms:

1. The lethargic type.
2. The cataleptic type.
3. The paralysis agitans type.
4. The polioencephalitic type.
5. The anterior poliomyelitic type.
6. The posterior poliomyelitic type.
7. The epilepto-maniacal type.
8. The acute psychotic type.

To this classification one can very well add the breathing syndrome. Many patients develop a certain ritualistic sequence of breathing movements. In this group there are patients who develop postural movements as a compulsion. They may bend forward, put their hands upon their knees, stand for a certain number of seconds, then straighten up; throw the head to the right then to the left, then backwards to nearly between their shoulders, and then taking several deep and rapid inspirations. This picture may be varied in many ways introducing and leaving out certain motions and movements.

The investigators of New York City, among whom is Dr. Gregory of Bellevue Hospital, early called attention to a very significant fact and that is the character change that follows encephalitis in young children. A child below the age of puberty having encephalitis frequently develops a great change in character. The child may become vicious, quarrelsome, ugly and incorrigible. He frequently disturbs the whole household, and if sent to school disturbs the school likewise. He frequently runs away, and causes great worry to those in charge of his care. While those who have encephalitis after the age of puberty and after the character is quite well formed rarely develop

any great change in character. Wimmer of Copenhagen says of them: "They are too insane to live at home and too sane to be sent to the State Hospital." These patients do not yield to punishment but become very much worse after its administration. Special homes are being built in the East for the care of these unfortunate children.

As a short recapitulation of signs and symptoms I wish to mention lethargy, diplopia, frequent rigidities, loss of deep reflexes or increased inflexes, change in the superficial reflexes, catatonic attitudes, paralysis agitans syndrome, disturbance of the bladder, frequent bilateral facial paralysis, and at times persistent hiccoughs have been present and frequently character change. The spinal fluid generally shows in the acute stage increased lymphocytes, increase in globulin and sugar content, and occasionally a luetic Colloidal gold curve.

Nine-tenths of these patients in the acute stage are diagnosed as influenza. Later, however, when the sequellae begin to appear they are diagnosed as hysterics, then manic-depressives or dementia-precoxes, and finally the correct diagnosis of encephalitis may be made. This was the history of the epidemic of 1889 and is certainly the history of the present epidemic. One frequently sees children and young adults with very marked abnormal neurological findings still diagnosed as simple hysterics.

A classification of the pathology of these cases would include the pathology of the whole cerebro-spinal axis. Again, Tillney gives the following pathological or anatomical classification:

1. Cases with general symptoms indicating involvement of the nervous system, but absent, scant or fleeting localizing signs.
2. Meningitic type.
3. Cortical type.
4. Pyramidal system type.
5. Thalamic type.
6. Corpus striatum (extra-pyramidal) type.
7. Brain stem type.
8. Cerebellar type.
9. Spinal type.
10. Peripheral nerve type.
11. Multiple diffuse lesion type.

I repeat this classification only to show the great and varied destruction which may follow in the wake of a mild and apparently insignificant attack of that which is diagnosed as influenza.

The differential diagnosis is often difficult. Tuberculous meningitis frequently is a very difficult and at times an im-

possible problem to solve. The spinal fluid may be of great help as the increase cell count in encephalitis is due to the increase of lymphocytes. In acute poliomyelitis the spinal fluid shows a large increase of polynuclears and this may assist in the differential diagnosis. Botulism is another disease which closely resembles encephalitis. The history of spoiled canned meats, beans or ripe olives will assist in the diagnosis. The spinal fluid in botulism is under high pressure, the fluid appears milky in color, the cells, mainly polynuclears, may be increased to two thousand per c.m.m., and the demonstration of a large bacillus. Clinically the pupils are fixed and dilated, weakness and prostration marked.

Syphilis of the nervous system may and frequently does resemble encephalitis. However, syphilis of the nervous system is not usually accompanied by fever, and in the young the positive blood Wassermann and spinal fluid will help in the examination. Encephalitis may produce a typical Argyll-Robertson pupil, and many other symptoms of tabes.

Acute epidemic meningitis may offer some difficulty in diagnosis, but the stiff, rigid neck and Kernig's sign, together with the great increase of polynuclear cells in the spinal fluid, coupled with the presence of meningococcus, determines the diagnosis.

The prognosis in epidemic encephalitis is generally very grave. The authorities are agreed that from twenty to thirty per cent die in the acute stage, while from fifty to ninety per cent die in the chronic stages within ten years. Dr. Camp of Michigan in a personal communication is very pessimistic as to the outcome of this disease. Professor Dr. Wimmer of Copenhagen is also very pessimistic, as is Jelliffe of New York. Dr. Jelliffe makes the statement that three out of ten die in the initial stage and six out of the remaining seven will die within five or ten years. Kirby and his co-workers of New York have a little more encouraging outlook on the prognosis of this dreaded disease. Kirby feels that something can be done.

A great many different drugs and sera have been tried out, in the treatment of this disease. Typhoid vaccines have been tried with the injection of ten million up to a billion bacteria at a dose, the object being to produce a chill. Infection with malaria has also been tried but without results. At the present time we are mak-

ing use of two treatments, the first of sodium cacodylate treatment as brought out by Kenner of Prague in 1922, and the sodium iodide treatment as recently brought out by Kirby and his co-workers of New York City. At the present time we are giving the young adult one gram of sodium cacodylate intravenously every other day, alternated with two grams of sodium iodide intravenously, thus giving the adult three grams of sodium cacodylate and six grams of sodium iodide per week. Also, if there is much restlessness or depression a mild sedative is given. For the rigidity of the Parkinson's syndrome 1-200 of a grain of hyoscine is given by the mouth from three to five times daily. This treatment is kept up for nine weeks, then the patient is given a four week's rest. Those who have taken the third course of treatment have shown improvement. However, no one knows what the future holds for the victims of this dreaded malady.

A few cases may be reported at this time.

Case 1—is that of a young girl ten years of age who had had a mild attack of influenza. Was seen ten days after the acute attack, presenting what appeared to be an ordinary attack of chorea. In giving the prognosis we said that she would probably be well in a few weeks or months providing that the influenza was not encephalitis. Fourteen days later her choreic symptoms had disappeared but she died suddenly of the paralysis of respiration.

Case 2—was seen two weeks after the initial fever, which in this case was very mild. The patient would have sudden paroxysms of fright and agitation, would jump out of bed and run and scream for several minutes, then would quiet down and be allowed to be put back to bed. This she repeated from ten to fifteen times daily. Under sedatives she improved, but now after four months is very nervous, has many complaints, and of course is a sick child.

Case 3—recently came under my care with a history that two years ago was very ill, giving the symptoms and findings of typhoid fever, even hemorrhages of the bowel. About the time that the typhoid fever began to subside she went into a definite stupor from which she rallied after six weeks. At the present time she has some neurological findings of the cranial nerves; the upper deep re-

flexes are normal, while the knee jerks and Achilles' tendon reflexes are abolished, and the vibratory sense is lost below the knees. She is mentally upset and distracted, which mental state, taken together with the neurological findings, suggested cerebro-spinal syphilis, but her blood and spinal fluid findings were entirely negative to syphilis. She is slowly improving.

Case 4—a male 23 years of age, had influenza in February 1920, was quite ill at the time, but thinks that he recovered fairly well, but says that in wheat harvest of 1920 he fell asleep in the field, was taken to the house and slept almost constantly for the next three months. Again he was able to be about, but lost his ambition and initiative and found it practically impossible to work. In 1923 he noticed that he was becoming slow and stiff, memory became poor and finally was almost destroyed. His case was frequently diagnosed as hysteria. Came under my care August 1, 1926, with a definite Parkinson's syndrome, his right side rigid and nearly useless, no winking, rolling of his eyes upward, masked face, with some tremors. This case has responded well to the treatment outlined above, he having taken the third course. His memory is normal.

Case 5—age 22, had influenzal attack in 1918, appeared to recover, three years later became stiff and tremulous, was referred to me in October 1926. He was stooped nearly right angles at the hip, marked tremors of the whole body, masked face, eyes rolling upward until the pupils were out of sight, and completely incapacitated. This boy has shown only moderate improvement under treatment.

In conclusion, epidemic encephalitis is recognized as a disease entity; that the mortality in the acute stage is from twenty to thirty per cent; that a large per cent of the patients develop a chronic stage that gives a multitude of signs and symptoms and carrying with it the very high mortality of from fifty to ninety per cent.

Discussion—DR. W. W. RUCKS, Oklahoma City.

In the history of medicine there have occurred from time to time epidemics of infections producing a combination of symptoms which have not hitherto been observed, and the advent of a new disease

is announced. Before its pathology is fully known and while the lay press is still featuring it as a matter of news it is usually named from some one of its more prominent symptoms, hence the name *lethargica encephalitis* or sleeping sickness of the press.

That *encephalitis lethargica* is a new disease in this country is the statement of Simon Flexner, who says that there is no reason to suppose that this epidemic disease of the central nervous system ever before existed in America.

Two outbreaks of a similar infection have been previously reported according to Flexner. The first in 1712 in Germany and the second in 1890 in Austria, Italy and Switzerland under the mysterious name "Nona," which name was given by the lay press and probably refers to the coma which attended the disease. This disease was characterized by somnolence, stupor and coma, not unlike some of the cases of epidemic encephalitis, especially the earlier recorded cases.

Admitting that "Nona" was epidemic encephalitis and considering that the present epidemic originated in Austria, Flexner questions if it may not be that the southwest corner of Europe is the epidemic home of the epidemic variety of encephalitis, and that in ordinary times the disease slumbers on, but the depressing conditions brought about by war, hunger, cold, migration of people and insanitation, might initiate the conditions under which a low endemic might be converted into a higher epidemic incidence of the disease, and that a similar set of depressing and otherwise favoring conditions may be supplied by a highly debilitating and destructive epidemic such as periodic waves of influenza which recur from time to time. In this way possibly may be explained the German epidemics of 1712, also called sleeping sickness. And the "Nona" of 1890 which was co-incident with an epidemic of influenza, just as the present epidemic encephalitis and influenza cannot be disassociated.

Flexner observes that what the war did for Austria in 1916 the pandemic of influenza may have done for the rest of the world in 1918. In this way Flexner considers the relationship of epidemic encephalitis to influenza, but chooses to regard them as independent diseases.

This epidemic beginning in Austria in 1916-17, reaching France and England in 1918 and appeared in the United States

in the Spring of 1919. It has occurred in Africa, Australia and South American countries, becoming world wide, just as did influenza.

As to etiology, I am not ready to believe that it is the same as influenza, but I do believe that it follows in the wake of the epidemic waves of that disease. So also do I believe that influenza prepares the way for the advent of many other disease entities coming not as a complication but as a sequence. In this way the incidence of mental disturbance may be materially increased. Those handicapped by a mortgaged heredity or poor developmental conditions are easy victims of the depressive disease, therefore we may find a greater number of dementia precox patients with their changed personality such as mentioned by Dr. Gregory. The person with the manic personality may have his slumbering psychic peculiarities roused into pathological activity. This applies to involuntary melancholia and other forms of psychic disturbances. These forms of mental disease have existed from time immemorial, long before this peculiar type of encephalitis visited our hemisphere—unless we believe as Dr. Gregory suggests, influenza and encephalitis are one and the same disease—which to my mind the preponderance of evidence is against.

I fully agree with Dr. Gregory as to the seriousness of this dread disease. Its mortality is not to be feared as much as its morbidity, which manifests itself in the most distressing and unremitting psychoses and neuroses and in the study and care of these symptoms it is well not to lose sight of encephalitis lethargica as a possible etiological factor.

ASTHMA IN CHILDREN*

RAY M. BALLYEAT, A.M., M.D.
OKLAHOMA CITY.

Until relatively recent times, little was done for the asthmatic child other than palliative treatment. The medical profession considered asthma in the category of minor human ailments and there were good reasons for this attitude. In the first place, asthma seldom causes death, especially in childhood, and in the second place, the physician could do very little or nothing towards relieving it. Parents

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were assured that their children would outgrow the asthma.

This formerly hopeless situation has been happily changed during the last decade, since the exact means of determining the exciting causes of asthmatic symptoms have been used, and since more attention to the disease has been demanded of the profession.

We realize now that children, who are sneezers and have wet noses continually, or who develop coryza or a deep cough on the slightest provocation, usually have their trouble due to hypersensitiveness to some protein. Today careful search for the causative factors and their elimination is being done, with the result that at least 80 per cent of asthma in childhood is well controlled. We regret the fact that there are so many doctors who still make no effort themselves toward determining the exciting causes, or refer them to someone who will investigate the cause. It certainly suggests negligence to see children in the teens, who report that they have had frequent attacks of asthma over a period of years, all traceable to some food in the diet, or some inhalent in the home, both of which could be easily removed.

The material for this paper is based on the study of one hundred consecutive cases of asthma, ranging in age from five months to fourteen years. All of the subjects were private, American born, and have been under my observation from four months to five years. Their cooperation has been excellent, giving me an opportunity to study their condition very carefully.

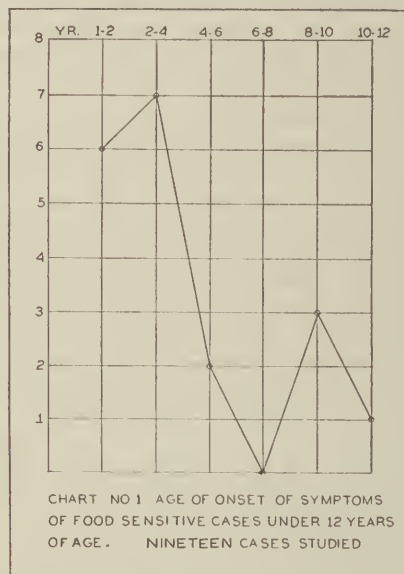
The asthmatic syndrome is not very difficult to diagnose after the patient is ten years of age, but during the first decade, asthma is frequently called bronchitis, bronchial pneumonia, or some peculiar form of croup. Care should be taken to differentiate between the allergic and non-allergic types of respiratory disturbances, for failure to recognize asthma endangers the lives of children because of the liability to repeated severe infections such as sinusitis, tonsillitis and bronchitis.

In this study I shall not restrict the term asthma to those cases which are of the sensitive type.

ACQUISITION OF PROTEIN HYPERSENSITIVENESS

Bronchial asthma, like hay-fever, is inherited. It is a peculiar sensitiveness of

the patient to an ordinarily innocuous substance. It differs from hay-fever only in the fact that the sensitiveness is exhibited by the bronchial mucous membrane instead of by the ophthalmic and nasal mucous membranes. This relationship is further shown in the associated sensitiveness of the skin in asthmatics to the offending substances, and, just as is done



in hay-fever, advantage is taken of this fact by the physician in seeking the substance or substances responsible for the attacks of asthma. It is generally believed by men working in the field of allergy that a child inherits a blood stream that has an ability to become sensitive to a protein, but that it does not inherit a sensitivity to any specific protein. However, pediatricians have so frequently observed idiosyncrasies to foods in early life, and have noticed that symptoms appear the first time the child was given the food to which it is sensitive, that they have frequently asked this question: "If a child must come in contact with a protein before it becomes sensitive, why do they show signs of sensitivity the first time the food is taken?" This has been explained by some authorities on allergy by saying that the child had previously received the food in the form of split products through the mother's milk. After having found several cases showing evidence of sensitivity on the third, fourth and fifth days of life, it has made me believe that a child may develop a specific sensitivity to a food, and probably does develop that specific sensitivity to

foods in utero. Through the cooperation of several of the obstetricians in Oklahoma City I am having the opportunity to carry on some clinical experimental work in testing the newborn to some of the common foods, so that I may either prove or disprove this point.

It is generally believed that one usually becomes sensitive to protein that is either ingested or inhaled in massive doses. Clinically, this idea is a workable one. For example, I find a large per cent of my children sensitive to feathers, for the reason that my children sleep on feathers. Peshkin of New York City, who is working with the Jewish children from the tenement districts, finds a large per cent

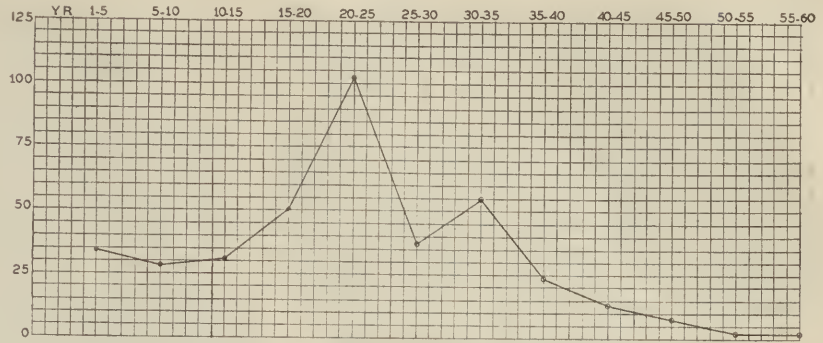


CHART NO 2 DISTRIBUTION OF CASES OF ALL AGES HYPERSENSITIVE TO POLLEN ACCORDING TO AGE OF ONSET OF SYMPTOMS BASED ON THREE HUNDRED AND EIGHTY FOUR CASES

The clinical effects should be elicited of foods, dusts, animal dander, hair or feather pillows, mattresses, and fur trimmings of coats. Inquiry concerning the occupation of the parents and the chance of contact with stables, butcher shops, poultry markets, etc., should be made.

PHYSICAL EXAMINATION

A careful physical examination should always be done as there are many complications, such as adenoids, emphysema, bronchitis and bronchiectasis. Such complications will alter very materially sometimes the prognosis. The typical asthmatic syndrome may sometimes be found in those who have enlarged tracheobronchial glands or an enlarged thymus gland. Moderately advanced pulmonary tuberculosis may cause asthmatic symptoms, but this is very rare in children.

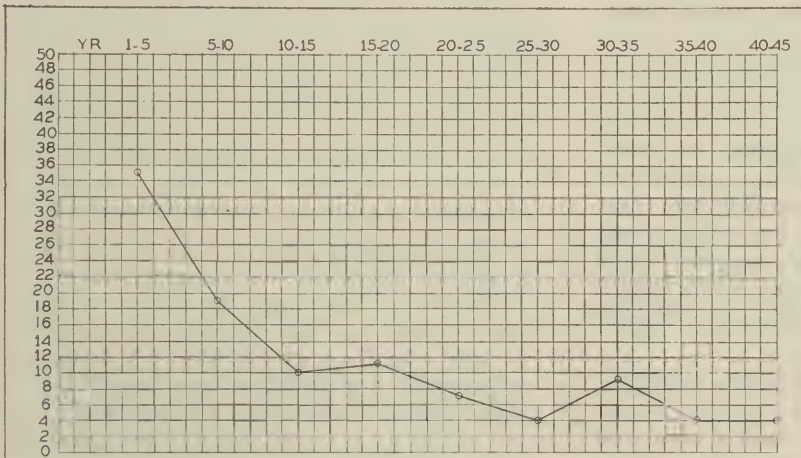


CHART NO 3 AGE OF ONSET OF SYMPTOMS OF PATIENTS OF ALL AGES SENSITIVE TO ANIMAL EPITHELIAL. BASED ON ONE HUNDRED AND THREE CASES.

of his cases sensitive to rabbit hair. He finds that the pillows and mattresses on which those children sleep are usually made of rabbit hair. During the past seven years in my study I have only found two cases sensitive to rabbit hair.

HISTORY

The importance of a detailed history cannot be overestimated. One should first inquire concerning inheritance. There should be careful questioning concerning hives, eczema, vomiting in early infancy, rhinitis, bronchitis, bronchial pneumonia, peculiar forms of croup, etc.

HEREDITY

A positive family history of asthma or hay-fever was elicited in 73 per cent of the cases studied. In considering a family history I used the following as a criterion. A history of either asthma or hay-fever, or both, in the father or mother, in one or more of the brothers or sisters, or a history of several of the relatives in the second degree, such as several uncles or aunts, or grandfathers and grandmothers. In those cases which do not give a history of asthma or hay-fever in

the first degree, it is often common to find a history of several members of the second degree. I cannot help but feel that we must consider a history of several members of the second degree as being a definite family history. In our records of hay-fever patients of all ages, I find a definite family history of relatives of the first degree in 58 per cent of the cases. Adkinson has reported an antecedent history of 50 per cent of allergic cases, of all ages studied.

GENERAL HEALTH OF ASTHMATIC CHILDREN

In dealing with asthmatic children it is interesting to note that, besides the asthmatic tendency, they are otherwise far above the average in general health. In dealing with adults, who have asthma and hay-fever, I have found this to be likewise true. In history taking I have made special notes concerning their general health as to operations done, infectious diseases, the ability to overcome diseases if contracted, etc.; and I have found in 83 per cent of the children much fewer contagious diseases than in the average child, and that their general physical condition, other than asthma, is much better. I have also elicited a history that if they have contracted some contagious or infectious disease, or some other pathology has developed, such as appendicitis, that their resistance seems to be extra good. In dealing with hay-fever among both children and adults, the excellent health of the individual, other than the allergic state, is very striking.

RELATION BETWEEN ASTHMA, HIVES AND ECZEMA

It is generally believed that hives and eczema in the child are only skin manifestations of protein sensitivity. In many cases the food cannot be determined, inasmuch as it is probably due to split protein products. Some of the foods can be split in the laboratory and we are able to test with split products, but many of them cannot be split. In the series of cases I am reporting, I found hives associated with asthma in 18 per cent, and 13 per cent of the cases had had or had at the time of their examination, eczema. It has been my experience that hives is largely caused by some food that is not taken into the system daily, and eczema is largely due to a food that is almost constantly used. For example, celery, strawberries, and tomatoes are common causes

of hives; while eggs, milk and cereals are a common cause of eczema.

TESTING FOR HYPERSENSITIVENESS

It has been previously mentioned that membranes that are sensitive, also have skins that are usually sensitive to the same substance, and advantage is taken of this fact in seeking the substance or substances responsible for their trouble. Children, who have asthma, should be routinely tested with all inhalents with which they come in contact, such as animal epithelial, dusts, orris root and insecticides, also foods and pollens. Testing an asthmatic child is not a simple matter and should not be done by one who is not experienced, inasmuch as it is very difficult at times to determine between positive and negative reactions. Foods, for example, frequently give very slight reactions. Immediate readings must be taken in cases of foods, and later twenty-four and forty-eight hour readings should be taken.

The skins of different individuals vary greatly in their reactions to protein. Two persons may be tested with the same protein, and one would show a very slight dermal or intradermal reaction, while the other would have a very marked reaction with both methods of testing, and yet the mucous membrane sensitivity of both individuals would be comparatively equal.

The intradermal method of testing must be done in all asthmatic cases, otherwise it will be impossible in the majority of cases to find the offending protein. In our work as a routine, the cutaneous or scratch method has been used, but always checked with the intradermal method, which is a very delicate one compared with the dermal method. We found all pollen-sensitive cases to show positive reactions to dermal tests, but only 14 per cent of the cases that were sensitive to animal epithelial showed definite unquestionable positive reactions with the dermal tests. In other words, if we should use the dermal tests only, we should fail to find positive factors in a large per cent of those sensitive to animal epithelial. The dermal method should always be used routinely first, so as to be sure one is not dealing with a hyper-sensitive patient, or otherwise marked reactions might be obtained by the intradermal test.

Food protein will frequently show a delayed reaction. A delayed reaction is one that does not show evidence of a hive

with erythema in thirty minutes time or an hour, as is found in cases of pollen sensitivity; but will show a positive reaction at the end of twenty-four hours, in the form of slight erythema or a pustular-like area which is nothing more than a necrosis of the tissue. Delayed reactions are more often found in cases of eczema than in those who are suffering from asthma.

In this article time will not permit a discussion of the technique of the test. However, I wish to call your attention to the fact that testing should be done with the greatest care and that all tests should be rechecked two or three times as a means of trying to evaluate the importance of the positive findings. Details concerning methods of testing can be found in a previous article.

FOOD AS A CAUSE OF ASTHMA

There is no question but that food plays a very definite part in the cause of asthma. However, food is largely the cause of those cases of asthma that begin within the first eighteen months of life. Twelve per cent of my asthmatic children began their trouble before one year of age, and only four of these cases were not sensitive to food. Twenty-eight per cent of all the cases studied were sensitive to some food, but on careful study we considered food as a probable factor in only 13 per cent of the cases. In 3 per cent of the cases it was the entire cause.

CASE REPORT

M. F. B., a girl, aged four years, was brought to the Clinic with a history of having had very severe attacks of hives, eczema, and asthma. On the 7th day of life she developed urticaria with a diarrhea and both were very severe for about three weeks. At this time eczema appeared and was extremely severe. The patient failed to gain weight and was considered hopeless. At the end of three months, however, the eczema and hives both partially disappeared, and asthma in a very severe form was superimposed on the former conditions, and since that time she has had severe attacks of asthma at least twenty days out of thirty.

On examining her I found a child above the average in weight for her age, and her general physical condition excellent. The chest findings were typical of an asthmatic child. During the last six months her mother reports that sneezing has been frequent, and that on one or two occasions, after handling a cat, her face and hands swelled severely.

On testing, she was found sensitive to the following proteins:

Eggs	000
Wheat	000
Orris root	0000
Cat hair	00

The mother was advised to remove orris root and cats from the home, eliminate eggs

and wheat from the diet, with the result that on the second day the child was free from asthma and has remained so since.

This is a typical case of asthma primarily due to foods, with orris root and cat hair as secondary factors. As this child grows older, she will have a tendency to become sensitive to other proteins, such as other animal epithelial or pollens. It will not surprise me at all to have her return at the age of 18 or 20 years with a history of hay-fever. Most asthmatic adults are multiple sensitive. However, if that time does come later in life, the other offending proteins can be removed or she can be desensitized to them.

COMMENT

In speaking of treating the asthmatic child, I am often told that this is not a cure. Surely it is not a cure, inasmuch as when one becomes sensitive to a protein, as a rule he remains sensitive the rest of his life; but with a little trouble on the part of the parents or the patient himself and a little time in behalf of the physician in the way of giving advice and treatment, such children, from all practical standpoints, should become normal.

IMPORTANCE OF FEATHERS

Of the one hundred cases studied, 56 per cent were sensitive to animal epithelial. In animal epithelial are included feathers, animal hair of all kinds, furs, etc. Of the animal sensitive cases, chicken and goose feathers were the most common. Forty-one per cent were found sensitive to chicken feathers, 33 per cent were sensitive to goose feathers and 31 per cent sensitive to duck feathers. Twenty-six per cent of the cases were found sensitive to all three feathers. Feather sensitization appears to be playing a very important role in the etiology of asthma in my cases, inasmuch as 16 per cent of all cases studied were sensitive to no other protein. It is very interesting to compare my findings with those of Peshkin, who found chicken feather reactions infrequent as compared with duck and goose, and as compared with other animal epithelial, such as rabbit hair. However, in New York City, most of the feathers used are those of duck or goose, while in Oklahoma the majority of the feathers used are either chicken, or mixed. He estimated that feathers were the sole cause of asthma in only 3 per cent of his cases. There is a reason for this difference between his and my findings. His children sleep on rabbit hair pillows, while children in Oklahoma, that I have investigated, sleep on feather pillows.

CASE REPORT

B. B., a girl aged 9, was first seen ten months ago. From the time the patient was a very small child her mother reports that she was a frequent sneezer, had a continuous nose cold and a rattle in the chest. She would be comparatively free in the summer, but the conditions mentioned above would persist throughout the entire winter. After two years of age she began to have frequent attacks of wheezing, which continued until the time she came to the Clinic. The family were contemplating moving to western Oklahoma, but were advised to have an investigation made before that was done.

Physical examination showed a child below par in weight, had never been in school on account of general physical condition, and a chest that was slightly deformed on account of wheezing, with bubbling rales throughout the entire chest.

She was found sensitive to duck, goose and chicken feathers. Treatment consisted of the entire elimination from the home of feathers, with the result that she has gone through the past winter with entire freedom. Although other children in the home have had frequent colds, she has had only a slight cold which did not involve the bronchial tree, as was common in former winters. Such cases as above related are very commonly found.

COMMENT

Many of the cases, however, are so sensitive that they have to be desensitized with feathers in order to permit them to go into other homes that have not been freed of feathers.

IMPORTANCE OF OTHER ANIMAL
EPITHELIAL

Sensitivity to cat hair, found in 21 per cent of our cases, was the sole factor in one, and a definite factor in several. Dog hair sensitivity, found in only 6 per cent, was the entire cause in one, and a contributing factor in three others. Horse dander sensitivity, found in 12 per cent, was in no case the entire factor, but a contributing factor in three or four cases. Sheep wool sensitivity, found in 3 per cent, was never the only protein to which the patient was sensitive, but was probably a contributing factor in one or two.

One patient was found sensitive to goat hair, one to cattle hair, two to ostrich feathers, and three to hog hair; but in none of these cases was any one the entire cause.

Rabbit hair sensitivity was found in two cases and in only one case was it the chief factor. Peshkin found rabbit hair sensitivity in 49 per cent of his asthmatic children tested. He considered it the entire cause in 14 per cent of his cases, and a contributing factor in sixteen others. In other words, rabbit hair was one of the chief causes of asthma in the series he studied, while in my series rabbit hair

was a very minor factor, and in my series feathers played a similar role as did rabbit hair in his. The reason is quite obvious, as has been previously mentioned.

After careful observation I have come to the conclusion that horse dander plays a very unimportant role as a cause of asthma, although patients may come in contact with horses enough to become sensitive and yet not enough to produce symptoms in the majority of cases. Occasionally somebody, who is sensitive to horse hair, gets in trouble from over-stuffed furniture in the home.

CASE REPORT

G. L., a boy aged 5, had had attacks of asthma both winter and summer for the past three years. His paternal grandmother suffered forty years with asthma and one sister had frequent attacks of hives.

Physical examination of the boy with a careful examination of the nose, showed nothing abnormal. Skin tests were negative except for dog hair, which was strongly positive. After finding him sensitive to dog hair he told us a neighbor was a dog fancier and the kennels were within one hundred feet of his home. A transfer of the kennel and the dogs to a different part of the city, with desensitization to dog hair, has given this boy complete freedom from his asthma.

SENSITIZATION TO POLLEN

In all cases routine tests were done with thirty-six pollens, along with the animal epithelial and foods. In no case did we find a patient sensitive to pollen by the intradermal method that was not found sensitive by the scratch method. One case was sensitive only to western ragweed. Treatment with western ragweed was instituted with relief. It has been my experience in testing adults that it is not uncommon to find them definitely sensitive to one or more ragweeds and negative to one or the other ragweeds. We have found this same fact to hold true in testing children.

Pollen was the entire cause of asthma in 25 per cent of the cases. Positive pollen tests were found in 55 per cent of the cases. It is not unusual to find children under five years of age who are suffering from pollen asthma. Of the 25 cases whose asthma was entirely due to pollen, 12 or about 50 per cent, developed their asthma before five years of age.

Stuart, of Boston, makes the statement that asthma is found to be infrequent in infancy, and hay-fever rare before the sixth year. Of the 25 cases, whose asthma was entirely due to pollen, 80 per cent of them had definite hay-fever symptoms, and 20 per cent of them developed both

asthma and hay-fever symptoms before the end of the second year.

Fifty-five per cent of all cases studied were sensitive to either pollen alone or a combination of pollen and some other protein. Thirty-four per cent were sensitive to ragweed, either alone or in combination with other pollens. Twenty-one per cent were found sensitive to grasses, either alone or in combination with other pollens. In many of the cases the sensitivity to pollen was an incidental factor.

The per cent of the cases reported sensitive to pollen is much greater than the per cent given by other men, and no doubt they will wonder why such a large per cent of children should have asthma due to pollen. It is generally considered that people become sensitive to those proteins with which they come in contact in massive doses. That rule explains why such a large per cent of the children in Oklahoma have asthma either directly or indirectly due to pollen. In New York City the Jewish children become sensitive to rabbit hair, as shown by Peshkin, because they come in contact with massive doses of rabbit hair. The same reason explains why our patients become sensitive to pollen. It has been shown that the concentration of the pollen in the air in Oklahoma is five and six times as great as that of northern and eastern states. The children I studied are constantly coming in contact with massive doses of pollen, from April until November 3rd—the average date of a killing frost in Oklahoma. They should and do become sensitive to pollen.

NON-SENSITIVE CASES

It is my belief that true asthma cases are sensitive to some protein. In this series of one hundred consecutive cases only 3 per cent were non-sensitive, and three of these cases had associated with their labored breathing either marked emphysema or bronchiectasis. They were never entirely free from symptoms. It is possible that they should not be included in this list, but I have taken the cases in consecutive order just to show that the cases coming with a history of asthma are primarily of the sensitive type.

BACTERIA AS A CAUSE OF ASTHMA

In the literature there are frequent reports of asthma due to bacterial infections. The question as to the possibility of bacterial sensitization was at one time very thoroughly studied and was accepted by many workers, but during the last few years better clinical observations along with our laboratory findings have caused

the majority of men working in the field of allergy to believe that the role played by bacteria, as a cause of asthma due to bacterial sensitivity, is practically nil. There are cases without question in which bacterial infection is a secondary factor.

A few years ago a great deal of attention was paid to testing with bacterial proteins, both by the scratch method and the intradermal. However, at the present time, testing with bacterial protein has been discarded by practically all. A few years ago the author felt that about ten or fifteen per cent of our cases of asthma in children were directly due to a bacterial infection in the bronchial tree that produced asthma in a mechanical way, i. e., the amount of pus produced from the infection would bring on a spasm of the bronchial tree, as nature was trying to eliminate the foreign substance. I have studied these cases very carefully during the past few years and I have come to the conclusion, after finding so many of them sensitive to animal epithelial, and on the elimination of the same, the bacterial infection automatically cleared up, that the infection played practically no part at all. In this series, I found only three cases that were apparently bacterial in type, and they were all complicated with marked emphysema. If emphysema or bronchiectasis is present, it seems reasonable to me to believe that the spasms of the bronchial tree may be produced as a means of eliminating the foreign material from the lungs. It is true that the bacterial infection was superimposed on the protein asthma in many cases, and unless the protein, to which the patient is sensitive is eliminated, or they are desensitized to the same, the bacterial infection will continue to exist, but my experience has taught me that the elimination of the sensitive substance or desensitizing to the same will automatically relieve the patient of most of the bacterial infections.

MULTIPLE PROTEIN SENSITIVITY IN CHILDREN

In dealing with asthma both in children and adults, it has been my observation that multiple sensitivity is the rule rather than the exception. When one is born with a blood stream that has the ability to become sensitive, he theoretically ought to become sensitive to more than one protein. However, this is not always true. If he has the ability to become sensitive to foods, there is no reason why he should not become sensitive to animal epithelial or pollen, and in

many cases this actually happens. In my series we found 25 per cent of our cases entirely due to pollen, and 18 per cent due to animal epithelial. This makes 43 per cent entirely due to sensitivity to one group of proteins. However, many of these cases were sensitive to some other protein but it was a negligible factor as a cause of their asthma. It is very common to find a patient sensitive to a large group of proteins, and all excepting one or two are of no significance. Only 6 per cent of the cases were sensitive to just one protein. The very fact that patients are, as a rule, sensitive to more than one protein, makes it very important to search for every possible factor. That means very thorough testing and re-testing must be done. Unless this is taken into consideration, failure to obtain the best results often occurs. As an example: A child will be very sensitive to pollen, and desensitizing to the same usually will not relieve him of his asthma, because he is also sensitive to feathers, or to some pet in the home that has not been eliminated. The average doctor, who sees a case of asthma in a child, has little conception of the importance of the multiplicity of causes.

RELATION OF INFECTED TONSILS TO ASTHMA

It is quite unusual to find a child with asthma who is more than ten years of age, and who has not had his tonsils and adenoids removed. Many of them have been told that it would cure their asthma. Of the one hundred cases I have recently reviewed, 83 per cent had had their tonsils and adenoids removed. I have inquired carefully as to the results and many parents would tell me that the general health of the child would be improved, but only in a few cases did it make any difference in the number of attacks of asthma. Personally, I believe that the removal of tonsils had very little to do with benefiting this minor per cent, but it was the removal of the adenoid tissue, the adenoids interfering definitely with normal breathing, thereby allowing the asthmatic child to breathe through the mouth, taking into the bronchial tree the cold air, that stimulated a spasm of the bronchial tubes. I feel that any child, who is suffering from asthma, and who has infected tonsils and adenoids, should have them removed on general principles, but by all means it is important to remove the adenoid tissue.

TREATMENT

The treatment of asthma in childhood is by no means simple and unless one does careful protein testing and keeps in mind the fact that most children are multiple sensitive, some of the substances to which the patient is sensitive will not be removed and thereby good results will not be obtained. Desensitizing against those proteins, that cannot be removed from the patient, must be done.

Nearly every patient is a multiple sensitive case, as I have previously mentioned, making treatment complex, and thereby requiring a careful analysis by the physician and the best of cooperation on the part of the patient and parents. However, if patients are thoroughly tested to determine their sensitivity, the sensitive protein removed from their diet if it be a food, or removed from their contact if it be an inhalent, and the individual desensitized to those that cannot be removed, such as pollens or orris root, the treatment of asthma in children is just as satisfactory as treatment in any other chronic disease.

My failures in the past have almost entirely been due to lack of elimination of some inhalent with which the patient comes in contact.

Until two years ago we did not use, routinely, the intradermal method of testing for sensitivity to animal epithelial. By using the dermal method entirely, for such testing, we missed finding positive factors in at least 85 per cent of the cases of children, who were sensitive to the animal epithelial group. Intradermal testing must be done in practically all cases, both young and old, if one hopes to find nearly all the positive protein factors.

RESULTS

In this series of one hundred cases, we have obtained complete relief in 51 per cent, good results in from 80 to 90 per cent, fair in 10 per cent, and poor in 9 per cent. By complete relief, I mean freedom from symptoms. By good results is meant the removal of from 80 to 90 per cent of the attacks. By fair is meant 50 per cent relief. Out of the nine cases, who obtained poor results, three were non-sensitive and three others had their asthma over a long period of time and had developed marked emphysema. I want to mention here that emphysema is a complication that comes with asthma in childhood and which interferes seriously with good results, therefore treat-

ment of the asthmatic condition should be started early so that such complication might be prevented.

The relief in treatment depends to a large extent on careful observation and constant training, both on the part of the child and the parents. By training, I mean the teaching them of the importance of elimination of proteins that can be eliminated, and to be sure that they understand what is meant by absolute elimination, both in case of foods and animal epithelial.

Desensitizing to pollens and orris root will not be found satisfactory unless it is carefully done and the dosage carried sufficiently high.

CLIMATE

Certain asthmatic patients are relieved by climatic change; however, the per cent is small, being only about ten. The explanation of such relief or cure is getting away from the specific protein to which they are sensitive. For instance, a patient sensitive to Bermuda grass may go only to the northeastern part of the United States and be free; or one who is having asthma due to sages may go only to the eastern section of the United States and be entirely free; but as a rule, asthma is not due to a sensitivity to one protein, but to many. It is for this reason that the per cent who obtain relief on climatic change is small. It is so common to get a history of a child that had severe attacks of asthma who was relieved by traveling in a car over the country, and on their return would have asthma again, only to find them sensitive to some animal epithelial, such as cat hair, or feathers, which explains their lack of attacks during their traveling, inasmuch as they were away from their feathers or from cat or dog hair. The majority of asthmatic children can either be relieved or cured of their trouble, it makes no difference where they may live. Before patients should consider changing climate as a means of relief, they first should be tested to determine the cause of the trouble and then they can be told quite definitely as to whether it would be of service to them to make the change. If this were done, it would not only save the expense of moving and the change of occupation, but it would benefit many families by preventing them from becoming poverty stricken. Doctors who advise their patients to change climate for the relief of asthma, frequently do them and their friends a great injustice, as the per cent of patients that find relief from their trouble on changing climate is small.

STREPTOTHRIX INFECTION IN THE HUMAN*

L. A. MITCHELL, M.D.
STILLWATER,

This is written in order to call the attention of the profession of Oklahoma to the existence of this infection in the state. In looking up the literature of streptothrix, it is found to be primarily a disease of the lower animals. It is the cause of bull-nose in pigs, Madura Foot in cattle, and lip and leg ulceration in sheep. The organism has been found in pure culture in the feces of pigs, and it is known to be the direct cause of alimentary necrosis in most all animals as well as in birds. The organism is an obligate anaerobe, and produces a characteristic odor when growing on artificial media. It was formerly called *Bacillus Necrophorus* since its characteristic lesion is necrosis. Recent study has put it in the class of fungi, and it is now so regarded by most authorities. It does not enter the unbroken skin so far as is known, but enters through some break in the skin.

The disease has been studied extensively in France by De Beurmann who describes two forms: The lymphatic and the disseminated. The two cases which I shall report belong to the former class. Two boys, room-mates, developed ulcers on the fingers, one on the right hand and the other on the left, about November, 1926. These ulcers were not painful, and attention was not directed to them for a few days, or until the lymph channels had become involved. During the first four or five days the boys both had chills, fever and sweats, and at the time of the year when others were having influenza, therefore, it was thought theirs was such condition. When the lymphatics became involved, the small, undermined, ragged ulcers were noticed. There was very little local swelling or discoloration. The ulcers were treated by ordinary methods, but they not only did not heal, but continued to extend their borders. A smear was taken which showed *Staphylococcus aureus*, as well as the same organism from a culture. Later a culture was taken from the tissue at the margin of the ulcers, and the *Streptothrix* was found. Please note the fact that the organism will not be found in the excretions, but in the tissues themselves.

*Written for the Meeting of the Medical Section of the Oklahoma State Medical Association, Muskogee, Oklahoma, May 1927.

Once the diagnosis was established, treatment was simple. Copper sulphate applied locally, and potassium iodide internally soon caused the healing of the ulcers, as well as clearing up of the lymphatic tracts, except the glands. The axillary glands in one case went on to suppuration, and had to be drained more than two months after the original infection. The epitrochlear glands on the other boy remained enlarged and firm for three months although they did not suppurate. It is supposed these boys picked up the infection by gathering pecans from a grove where hogs had pastured.

The main plea of this paper is for us to look out for this infection in those who handle livestock. When we find such an ulcer as is described, which does not heal readily under ordinary treatment and which shows a marked tendency for lymphatic involvement, let us not only suspect chancre and anthrax, but let us get a culture from the tissue itself. This may show true condition.

In the disseminated form, the lungs bear the brunt of the attack, and the mortality is very high. The two boys referred to were anemic and under par generally for some time, five or six months, showing the severity of the infection.

WASHINGTON, MAY, 1927

MRS. WALTER HARDY
ARDMORE.

We went to Washington with seeing eyes; for in Washington are the things the past is made of; the things we have leaned upon all these years.

We touched a page of American history when, one dew-drenched morning, the train glided into Harpers Ferry, a spot of stupendous natural beauty, where rivers meet and bridges swing from state to state, and we saw a granite shaft, pathetically still, paying tribute to the memory of JOHN BROWN. The hills about Harpers Ferry seem untouched still—no effort seems to have been made to set back the green fringes from the Potomac. We slipped through tunnels and skirted the river, and all the way our minds dwelt with the years time has put behind us. In our first swift glance towards the federal city we saw in a line the dome of the Capitol glistening in the early morning sunlight and, the clear-cut, colossal obelisk, the Washington Monument.

From that moment we found landmarks everywhere; and footsteps echoed—the footsteps of the great. How the past upholds itself!

There is great scenic beauty in Washington. The home of the convention, Washington Auditorium, had a rich setting. One remembers still the short, swift walk along New York Avenue under greening trees, in the soft freshness of May mornings, past the old Octagon House, past other old structures to the broad, open 17th Street; turning the corner by the imposing Corcoran Art Gallery, by the Red Cross building to the handsome D. A. R. building, the Continental Memorial.

Three tiers of the Washington Auditorium were used for the scientific exhibits. "Show your badge!" said the officer at the door. They were very particular about this. I think the layman should be admitted to these exhibits. There are so many things exhibited illustrative of what he should know. The propaganda of the A. M. A. should reach the layman. But day after day the portly policeman (all policemen are portly, except the lean ones) cried out, "Show your badges!" and one puffed out a declaring chest; and the enlightened were allowed to pass into the feast of enlightenment.

As we entered the Auditorium the dust of the historical Washington fell from us, the Pullman lassitude deserted us, we stepped lively, and sent searching, professional eyes this way and that. It was a familiar scene; there were some old friends there with some old things; and there were many new things—some things startlingly new. Next year—what? In a delightful book of fiction Mr. Wells, subtly portraying life, illustrates the trend for constant change. In a garden water flows from a fountain and over it is the inscription, "Everything Flows." This serves to emphasize that what is right today in medicine may not be so tomorrow. But they are a wonderful army, patient, unselfish workers, seeking the light, these men engaged in research work, and the men of medicine and surgery.

The exhibits on fractures was the liveliest exhibit there, I would say. And served the greatest good. For there were demonstrated the points you don't get in text books. Men got there some full hours of instruction that could only have been had otherwise by internship in an orthopedic hospital. In view of the fact that though there are "clinics" all over

the land luring the pathologies with a chachexia, 83 per cent of the surgery is being done in the country towns; and it is the orthopedic surgery which forms the major part of the work done in the towns; therefore the demonstration on fractures was appreciated by a large per cent of the doctors who attended the convention. Battle Creek had varied exhibits of something to eat and something to shake you up. Their Bulletin No. 8 shows on the front page an entrancing scene—a replica of Rotton Row and pedestrians on a morning jaunt. On the second page was a mechanical horse. A man or woman who enjoys a canter in the soft air would never get on one of these things. He would never parody a fine animal by such a deed. Riding a horse is not altogether getting the motions of certain muscles. A horse has a personality, and therein is the delight of a mount. Take the juice away from Battle Creek exhibits and what is left? "What Does Your Baby Put in His Mouth?" Why wasn't every mother there to see that exhibit, the exhibit that won the silver medal? Chevalier Jackson! Every layman knows Chevalier Jackson. To him go riding on special trains many young Americans with this thing and that in his craw and Chevalier Jackson removes them. The papers give this feat great headlines. Now that trachoma is going to be cured will this lessen some of the work at Ellis Island?

To see a diathermy apparatus you would think it was a radio until you turned it on. I had some very restful moments in the shadows of the amphitheatre as motion pictures were operated. What an ideal way to instruct! It was here was demonstrated the most startling thing of the convention, wherein the heart sounds were amplified 100,000,000,000 times. This was done by means of a Western Electric stethoscope, a vacuum tube amplifier and a sound projector. It was hair raising to sit back in the rear of the silent amphitheatre while the measured beat of the human heart fell on the ears like the boom of a distant "Big Bertha." And speaking of hearts, it was told that week that heart disease is the principal cause of death among our citizens. The responsibility rests on fast living; yet another theory is advanced. Infectious diseases are more successfully treated, but the aftermath is the injured heart; and while we have decreased the death rate from infectious diseases, we have increased the death rate of man in his maturity. One of the most enduring

things of the scientific exhibit was a bag given away from the booth of the Cantilever Shoe Shop. It was of brown paper, and it made the best thing to dump your literature into, and now it remains the best shopping bag a housewife ever had.

The men of medicine are waking up. They are specializing in psychiatrics, and they are going after the patients that run to the cults. Something had to be done, for the cults were getting a lot of them; the patient with an indefinable something that the regulars did not seem to be able to put their fingers on. The fakers couldn't either, but then they said they could; and that was the thing that got the patient. Now the awakened practitioner, instead of relegating this sort of patient to the waste basket, listens patiently to a string of symptoms, translates them into a real pathology and really exerts himself to help the patient. And he does. The fact that he tries, helps. So we see now that men with blasted ambitions receive medical aid, and men with a grouch. If Scrooge were living in this era he would not have to wait on the miracle of a Christmas to have a change of heart. He would consult a "surgeon of the soul."

There never was a more effective decoration than the decoration of the Arcadia Hall the night the President addressed the doctors. American flags hung from the ceiling and festooned the walls; little orange and blue electric bulbs, row upon row, swung across the room like beads. The President was greeted with full volumed applause but not overwhelming. I recalled a meeting in New York, 1917, when Mr. Roosevelt appeared before 7000 physicians. He stood fully 15 minutes with head bowed to the thunder of applause that went up to him; then it was some minutes before he could find his voice, when all that was in him went out from him in a torrent of oratory. Mr. Coolidge is young looking, with a well thatched, sandy head, skin to match, and his nose rises without any bridge; the mouth runs in a straight line under it leaving little space for the upper lip. All the lines of his face droop—solemn like. When he rose to read his speech he donned a pair of glasses. He pronounced a lot of words his own way; he said "pison" and he read without gesture. He touched some high spots in his address. "There is no finer page in the history of civilization than that which records the advance of medical science. The heroism of those who have worked with deadly germs and

permitted themselves to be inoculated with disease that others might be saved was less spectacular but no less far reaching than other deeds of heroism The human race is by no means young. It is the inheritor of wide experience The truth must always be able to demonstrate itself A co-ordination of effort has raised the whole standard of life Mere fault finding has no value except to reveal the poverty of the intellect which constantly engages in it." And so on.

I was very close to the President's party as they left the platform and I saw a decided pucker between Mrs. Coolidge's dark brows. I thought the word, "pison," had disturbed her; but after the doctor had fussed about his excellency, placing a muffler about his neck and enveloping him in a heavy coat, her fine face relaxed and a wide smile flashed. She was only concerned about his health. He had been confined to his room all that morning. When Mr. Harding died the country was stirred on the matter of the amount of work the presidents had to perform. Would it be too much to exact of a president that he be an orator? A little hard work practicing oratory would bring results. These speeches picked out word by word from type written pages have not the force of words sent direct from mind to the audience. If the President had delivered his speech—graceful in continuity throughout it was—with the rhythmic rise and fall of a voice fired with enthusiasm, painting the vision of his listeners with the things he saw and felt, he would have performed a feat that would have had its ovation, and his oration would live as so many things said in Washington have lived.

The day was soft and fresh and it was a very blue sky that dipped to meet the green of Virginian hills, the day we played a little and went to Arlington to participate in the ceremony of placing a wreath on the tomb of the unknown soldier. The beautiful marble amphitheatre, the shrine erected to the memory of the unknown soldier has a wonderful setting. Standing under its arches one sees in a straight line across the waters of the Potomac to the dome of the Capitol, the Washington Monument and the Lincoln Memorial. On the other side the green slopes, fold up and unroll again and are lost in the blue of the Virginian ranges; and all about are little headstones, each one of them a stepping stone to liberty. "There is no unknown soldier," said the

speaker that day at Arlington. "There are unidentified soldiers, and their country remembers them and honors them." The Arlington Amphitheatre carries this message into the future.

One carried away from the convention the outstanding thing—the pre-eminence of industrial surgery. Pathology carried under an apron string can bide awhile, but the grimy worker, his body half naked, and sweating copiously, claims the attention of the skilled surgeon without the loss of time. For this is an industrial nation; factories abound; machinery numbs; and it is the hand that guides it. The hand is an intricate thing, all made up of little bones, facias binding them, tendons serving them, vessels feeding them, nerves directing them; and one joint of a little finger can stir up a peck of trouble. A hand is very important in the scheme of things; it is the directing force that activates industry. A man is entitled to its usefulness. Impair that and he is not a wage earner. And his case then is a matter between him and the surgeon, and a corporation or concern as the case may be, and the insurance man, and the man 'round the corner—the legal advisor. Today this is the order of things. It is the answer to that cry that rang out thousands of years ago. "Am I my brother's keeper?"

Challenging all human appeals is the Hospital. Hospitals must function thoroughly. People are educated to a new standard of service, they demand it in hospital service. Another answer to that cry of long ago, is the hospital in a community, well equipped, functioning healthily, and endowed. The health of mankind is every man's business. Some splendid demonstrations of men's visions, and their philanthropy are the endowed hospitals and the research laboratories.

Food is important. The Business and Professional women of America are proud of themselves. They have competed with men and are drawing large salaries down town. And a nation gets along somehow on improper and ill-cooked food.

It was even-fall when we steamed away from the federal city, the city of the 1927 convention, the city of the famous dead. The Virginian hills had lost their green, there were no shadows in the Shenandoah and Potomac Valleys; a silver ribbon trailed along, and in fancy we heard the "lap, lap" of the river. Bit by bit we left it all behind—Washington.

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DR. CLAUDE A. THOMPSON.....Editor-in-Chief
Barnes Building, Muskogee, Okla.

DR. P. P. NESBITT.....Associate Editor
Palace Building, Tulsa, Okla.

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EDITORIAL

"CONTRACT PRACTICE"

At the Dallas meeting of the A.M.A., the Judicial Council was requested to investigate the subject of contract practice. The Council states that the task has not been an easy one, that obtaining reliable information has been difficult, that responses to their inquiries cannot be accepted as an index of the prevalence of the practice, and that the Council is constantly receiving requests for opinions as to the ethical or unethical status of some particular phase of the subject from widely separated sections of the country. A

year ago the Council defined "Contract Practice" as follows:

"By the term "contract practice," as applied to medicine, is meant the carrying out of an agreement between a physician or group of physicians or principals or agents and a corporation, organization or individual, to furnish partial or full medical services to a group or class of individuals for a definite sum or for a fixed rate per capita."

The Council makes no mention of ethics in this definition, believing that contract practice per se is not an ethical question, ethics being involved only in the form of contract. They realize that there exists conditions which can only be met by contract practice, for instance, where large numbers of men are employed, remote from urban centers, it becomes necessary to employ physicians on contract basis, if the men are to be efficiently served by efficient medical men. They realize that, for instance, a community, too small to attract capable and efficient physicians, may enter into some form of proper contract in order to secure competent physicians. Their conclusion is that each case must be judged by its individual merits, rather than hard and fast rule, but, they do set forth certain points or formulae by which it may be determined if a contract be ethical or otherwise, and they are these:

1. When the compensation received is inadequate on the usual fees paid for the same kind of service and class of people in the same community.

2. When the compensation is so low as to make it impossible for a competent service to be rendered.

3. When there is underbidding by physicians in order to secure the contract.

4. When a reasonable degree of free choice of physicians is denied cared for in a community where other competent physicians are readily available.

5. When there is solicitation of patients directly or indirectly.

Oklahoma physicians should read and ponder carefully the above, for one of the most vexatious problems now, and for a long time past, confronting us, has been that of so called "contract practice". Often the discontent and bickering has not arisen directly over "contract practice" as defined above, but over the failure to secure or hold certain types of work in certain localities, where corporations, dissatisfied and disgusted with the actual

service, not the bills they have been called upon to pay, though they may have been excessive beyond reason, have rebelled and decided to go as far as they may in directing to whom their injured employes should be sent for treatment. It is believed that this situation is not in any sense "contract practice," but that it is the result of a gradually growing condition or system wherein the employer has decided that as he has to pay for the services rendered he should decide that his employee should be sent to efficient and competent hands for treatment.

The Muskogee, May meeting appointed a committee for the purpose of meeting and discussing these problems with those most vitally concerned. From this committee and meeting it is hoped that some concrete decision, binding and effective as to future procedure may be reached.

INTERSTATE POSTGRADUATE ASSEMBLY OF NORTH AMERICA

Dr. George W. Crle, Cleveland, announces the meeting of the above organization at Kansas City for the week of October 17. Pre-assembly clinics will be held October 14th and 15th.

This meeting is of peculiar interest to Oklahomans on account of the ease of accessibility and convenience generally to our profession. Among many notables to be present, and exclusive of a large number of authorities of the United States, will be many foreign authorities of note: Mr. John McArdle, University College, Dublin (Surgical Diagnostic Clinic); Wm. B. Hendry, Toronto, (Gynecological Clinic); Alan Brown, Toronto (Pediatric Clinic); Dr. Otto J. Kauffman, Birmingham, England, (Medical Clinic); Dr. R. P. Rankin Lyle, University of Durham, Newcastle-upon-Tyne, England, Mid-wifery and Gynecology; Dr. Ersilio Ferroni, (Obstetrics and Gynecology), Florence, Italy; Dr. Luigi Magiagalli, (Obstetrics and Gynecology), Milan, Italy; Professor Pasquale Siameni, (Tubal Pregnancy), Bologna, Italy; Professor Adolphe Maffei, (subject unannounced), Brussels, Belgium; Sir John F. H. Broadbent, (Problems in Etiology of Heart Failure), London; Dr. Sigmund Frankel, (Male and Female Hormones), Vienna, Austria; Mr. Garnett Wright, (Surgical Treatment of Gastric Ulcers), Manchester, England; Mr. C. H. Best, Toronto, Drs. I. Snapper, Amsterdam, Holland, and John C. Meakins,

Montreal, appear upon a diabetic symposium with Drs. Joslin of Boston and John of Cleveland. Dr. Fritz Steinmann, (New Ways in Dealing with Fractures and Injuries of Articulations), Berne, Switzerland. Sir John Bland-Sutton, London, heads a cancer symposium with Drs. Bloodgood, Fielding O. Lewis and James M. Martin. It is doubtful if we will have an opportunity soon to meet with such an outstanding array of high talent as will participate in this meeting.

PLIGHT OF OSTEOPATHY

At a recent meeting of the Oklahoma Osteopathic Association, Dr. George M. Laughlin, Kirksville, Mo., "keynoter," lamented the fact that there are only six osteopathic colleges in the United States compared to more than eighty schools of medicine, and that the number of osteopathic students is not increasing. We have had a suspicion for many years that we would hear this sooner or later, and that eventually this school would be annihilated between the wheels of the hordes of incompetent chiropractics loosed upon the people and the highly efficient, much-in-demand young graduate of medicine. As we have noted before the osteopath committed suicide when he clamored for the right, first to use anaesthetics, later increasing this demand to include narcotics and finally, demanding the right to use drugs "provided his school taught their use". The Kirksville authority deplores this state of affairs and urges his cult to get as far away from the use of drugs as possible. We fully agree with that part of the program. Only gross inconsistency coupled with political expediency ever permitted the Oklahoma osteopath to use drugs.

Editorial Notes—Personal and General

DR. J. W. ROLLINS, Paden, has moved to Prague.

DR. PAT FITE, Muskogee, is in Minnesota for several weeks. He will return August 15th.

DR. ROY A. WOLFORD, Muskogee, is attending Officers Reserve Training at Ft. Sam Houston.

DR. H. A. LILE, Cherokee, and Miss Ella MILLER of Helena, were married at Hominy, June 6. They are spending their honeymoon in Michigan and Washington.

DR. J. E. WALKER, Shawnee, has been appointed County Superintendent of Health.

DR. G. E. HARTSHORN, Tulsa, has been appointed Health Officer for Tulsa County.

DR. J. E. BROOKSHIRE, Tulsa, received painful injuries June 17th, in an automobile collision.

DR. LEWIS J. MOORMAN and family, Oklahoma City, have returned from a trip to Atlanta, Ga.

DR. JOHN F. PARK, McAlester, has moved to Tulsa. Dr. Park will be associated with the Oklahoma Hospital.

DRS. ROSCOE WALKER and G. E. ROLAND, Pawhuska, have returned from a successful fishing trip in Minnesota. Altogether the party traversed 24,000 miles of country.

OKMULGEE City Hospital made a slight profit upon operations for the last fiscal year. However, the hospital is not called upon to pay for water, interest or sinking fund.

DR. and MRS. A. D. YOUNG, Oklahoma City, are motoring through Canada and the New England States. Dr. Young will visit the Boston and New York Clinics during his absence.

HUGHES and PITTSBURG MEDICAL Societies held a joint meeting at Camp Craig, June 4th. The meeting was devoted strictly to pleasure and a discussion of business affairs.

DR. J. T. WHARTON, Sulphur, has resigned as superintendent of the Soldiers Tubercular Hospital. He is moving to Durant where he will have charge of the Memorial Sanitarium.

DR. A. L. STOCKS and family, Muskogee, are motoring through Canada and New England States. Dr. Stocks proposes to visit Vermont, and will limit his "bait" to red worms exclusively.

DR. A. W. HARRIS, Muskogee, has been re-appointed County physician.

DR. W. C. MITCHENER, Okmulgee, is taking a vacation in Salt Lake City.

DR. T. S. SANDERS Shawnee, joined the list of victims when his car was stolen.

DR. H. M. STRICKLEN, Tonkawa, is making extensive improvements to his hospital.

DR. D. LONG, Duncan, has been appointed Health Officer for Stephens County.

DR. FRED G. DORWART, Muskogee, has returned from Pennsylvania. While attending his father's funeral, Dr. Dorwart was stricken with appendicitis and immediately underwent operation successfully.

OKMULGEE COUNTY MEDICAL Society announces a meeting on July 11, at Okmulgee, at the Hotel Belmont. Dr. E. K. Witcher, Tulsa, read a paper on gastric ulcer. Dr. F. S. Watson, Okmulgee, presented some case reports.

DR. WALTER BENJAMIN WALLACE

Dr. Walter Benjamin Wallace, Lehigh, died at Coalgate, Oklahoma, July 3, 1927. Age 65 years, six months and seven days. Funeral services were conducted at the Episcopal Church in Coalgate, July 5, by the Rev. Isaac Parkin. Interment in Lehigh Cemetery.

Dr. Wallace was born at West Gore, Nova Scotia, Canada, January 25, 1862. He obtained his preliminary education at Acadia University, later graduating from College of Physicians and Surgeons at Baltimore, Md., April 28, 1891. He was licensed to practice medicine at McAlester, Indian Territory, July 4, 1904, locating at Atoka, after which he moved to Coalgate and Lehigh.

DOCTOR JOHN MARSHALL WILLIAMS

Dr. John Marshall Williams, Norman, died at his home June 11. Funeral services were held at Norman, Oklahoma, under the auspices of the Christian Church and the Masonic Lodge. Honorary pall bearers consisted of close professional friends of Norman.

Dr. Williams was born in Frankfort, Kentucky, April 17, 1862. His preliminary education was obtained in common schools. He graduated in medicine from Louisville Medical College in March, 1889. He was licensed to practice medicine in January, 1907, practicing in Swallowfield, Kentucky, for seventeen years prior to his moving to Oklahoma. Dr. Williams moved to Oklahoma, locating in Wagoner, where he remained until 1915, when he moved to Norman. He is survived by his wife and two daughters.

DOCTOR J. H. MAXWELL

Dr. J. H. Maxwell, Oklahoma City, died at his home from nephritis after an illness of five months. Born in Wayne County, Illinois, 1874. His parents moved to Kentucky where he received his early training and education, after which he graduated from the Memphis Hospital College in 1901. He was also a graduate of the University of Louisville, Kentucky. He located in Oklahoma City, March 20, 1906, where he has since practiced except during the time he was serving in the army. He was overseas during the World War, serving at Brest and Pau. He was a member of the First Christian Church, Oklahoma City, Knights Templar and a Shriner.

He is survived by his widow and three children, Mrs. Robert Corlett, Miss Chirley Maxwell and James Harold.

MUSKOGEE is still suffering from "lack of decision" as to a city hospital. A former site selected by the committee of the Commission was rejected. Now, after weeks of study, a proposition to acquire and rebuild an old college building, is rejected by a tie vote of the Commission.

LINCOLN COUNTY MEDICAL Society enjoyed a regular picnic meeting at the home of Dr. and Mrs. F. C. Brown at Sparks, July 6th. Roast lamb, fried chicken and attendant delicacies made the meeting a huge success. Drs. Kiebler, University Extension Department, W. M. Gallagher, Shawnee; C. M. Pounders, Oklahoma City, and J. H. Hughes, Shawnee, made short addresses.

TUBERCULOSIS

Edited by L. J. Moorman, M.D.
912 Medical Arts Bldg., Oklahoma City

Theses on Intestinal Tuberculosis. David A. Stewart. The American Review of Tuberculosis. May, 1927.

While little is known of intestinal tuberculosis aside from the gross terminal symptoms much has been gained by a routine use of the X-ray which by making an early diagnosis possible, gives the patient a much better chance for improvement or cure. This complication was found in about three-fourths of the far advanced cases in this series which approximates many series of post-mortem findings. Tuberculosis ulceration of the intestine has been considered hopeless largely because diagnosis was not made until the disease was far advanced. The earliest symptoms are so vague that the patient either does not notice them or attributes them to something he has eaten—they are often not mentioned to the physician for months and it is only by the most careful questioning that they can be discovered. The earlier symptoms are increased nervousness and irritability and unusual constipation caused by small bowel lesions; many complain of poor or altered appetite with vague discomfort after meals, gas and a "general not doing well" while under good conditions. Definite pain and diarrhoea seem to be later symptoms due to lesions of the large bowel. Physical examination shows little although slight tenderness was present in about one-half of these cases. The barium meal with observations from the fifth to the twenty-fourth hour was found most useful in establishing a diagnosis and was used as a routine for the last three and one-half years on nearly 800 patients. Under proper hospital conditions it is not fatiguing enough to be injurious to the patient and gives as valuable information as does the routine chest plate. As in pulmonary disease, intestinal lesions must be discovered before the patient is aware of illness if he is to have his best chance for recovery. Rest is the greatest factor in cure with sun treatment as the next greatest help. Surgery can only be used in the most carefully selected cases; diet is more or less disappointing while drugs relieve symptoms only. Prognosis in intestinal tuberculosis has always been considered very bad since it usually was not recognized until the last stages when combined as it ordinarily is, with advanced pulmonary tuberculosis, it proved too much for the patient. About one-half of the patients in this series made marked

improvement while only one-third ordinarily recover from this complication. If both pulmonary and intestinal tuberculosis were diagnosed earlier there is reason to think that intestinal lesions would be as amenable to treatment as are early pulmonary lesions.

The Treatment of Laryngeal Tuberculosis in Sanatoria. Charles D. Parfitt. The American Review of Tuberculosis. May, 1927.

Laryngeal tuberculosis is found in about one-third of all patients with active pulmonary tuberculosis and is, next to meningitis, the most serious complication. While it cannot be treated as a separate local condition, various local treatments are of great aid when combined with routine sanatorium treatment. Prolonged bed rest with voice rest, control of cough, sunlight, frequent application of formalin and lactic acid and careful use of the galvanocautery have been found to be most helpful measures. The cautery combined with voice rest has been found highly efficient and relatively easy. This treatment not only destroys a certain amount of tuberculosis tissue but improves the blood supply and stimulates the formation of scar tissue. It is indicated in mild laryngeal lesions with favorable prognosis to save time for the patient; in ulcerative lesions which are advancing and in progressing cases with fever, (also as a palliative measure in far advanced cases) if the patient has sufficient vitality to react. Three stages of laryngeal tuberculosis may be recognized and if this complication is diagnosed and treated early it is very amenable to treatment. Routine throat examination and prompt treatment will restore many of these patients to health with a good voice.

Factors Influencing the Early Mortality Following Extrapleural Thoracoplasty. Edward Archibald. The American Review of Tuberculosis. May, 1927.

The high operative mortality following extrapleural thoracoplasty must be lowered as much as possible if this operation is to become generally recognized by surgeons and available to the many patients who can be benefitted by it. Operative shock, given by most operators as the chief cause of death within the first few days after operation, seems to be a combination of true shock from the operation, cardiac failure caused by paradoxical respiration, anaesthetic poisoning and acute intoxication from tuberculous tissue. Death from pure shock seems to follow one-stage operations mostly. This type of operation is rarely justifiable now as its mortality is excessive even in favorable cases. Many deaths from a combination of these causes may be avoided by removing fewer ribs and shorter portions of ribs at each sitting—this may result in a less perfect collapse of the chest wall but by avoiding excessive mediastinal flapping and paradoxical respiration, also sudden closing of cavities with the resulting tuberculo-protein poisoning will save many lives. Local anaesthetic in large amounts is responsible for a certain number of avoidable deaths, first by anaesthetic poisoning, second by favoring wound infection and necrosis. The operation is best done under gas-oxygen with small amounts of novocain for the skin and intercostal nerves—gas-oxygen alone is often sufficient. If large amounts of novocain are to be used the patient should first

be tested for a possible idiosyncrasy for this drug. Tuberculous pneumonia is a very grave cause of death and there is much discussion as to its cause and prevention. Most authorities consider cough and expectoration indispensable in preventing this complication but recent lipiodol injections have demonstrated that cough during the first twenty-four hours is more likely to spread the disease into the sound lung as the thin tuberculous pus newly expelled by the suddenly collapsed cavities is easily forced by cough into the healthy lung tissue while abolishing the cough reflex for twenty-four hours gives this pus time to become mucoid and tenacious when it is easier for the patient to safely expell it. This is accomplished by a liberal use of morphine before and after the operation. Wound infection is another serious cause of death from this operation. It is favored by excessive use of novocain and may be diminished by greater care in approximation of the wound edges, also by not doing too much at one time. Care in the selection of cases is a very large factor in the success of this operation. Nothing is lost by putting the patient who may be a bad risk on absolute bed rest for some months while much is frequently gained. If the lesions in the better lung do not clear up under this delay one may be sure the operation would only hasten the disease. Recent activity of the exudative type in the better lung is an absolute contra-indication for the operation. A test phrenicotomy followed by a period of observation is useful at times in selecting cases.

ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M. D.
717 North Robinson St., Oklahoma City

Lumbosacral Backache. Charles E. Ayers. Boston Med. and Sur. J., CXCVI, 9; Jan. 6, 1927.

Von Lackum's recent work on the anatomical findings in dissected specimens tends to show that the lumbosacral joint, between a movable spine and a more or less fixed pelvis, is subject to considerable strain and injury.

In the normal spine, the weight-bearing, for the most part, is upon the vertebrae and sacrum. With an increased lordosis in this region, great strain is thrown on the articular facets, with constant steady increase of the deformity. With the strain and activity taking place in this region, arthritis is not an unusual complication. The author cites twenty-two cases in which lumbosacral strain with arthritis was demonstrable, and in which marked destruction of the cartilaginous disc had taken place. These included simple strain, spondylolisthesis, extra lumbar vertebrae with sacralization, and abnormally large processes with impingement.

He believes that aiding nature's attempt to sacralize the fifth lumbar vertebrae offers the most satisfactory course of treatment, and to that end, employs the fusion method of Hibbs, giving the following reasons for his choice:

1. That the dissection incident to the exposure of the lumbosacral articulation affords excellent opportunity to examine the posterior portion of the joint; the lateral facets are exposed and one can gain valuable information at this time.

2. The ankylosis, which is secured, extends the whole width of the laminae, even to the lat-

eral facets, giving a very secure, bony background for the support of the vertebrae.

3. The minimum risk attendant to the operation when properly performed; in one hundred and one fusion operations there has been no mortality.

Out of nineteen cases operated upon by the author, sixteen are now doing their regular work without pain, the remaining three cases not having progressed far enough to establish the end result.

In conclusion, he states that lateral X-rays of the lumbosacral region are essential in arriving at a diagnosis of low back pain.

Diagnostic Inflation of the Knee Joint. Maurice A. Bernstein, and Robert A. Arens. Radiology, VII, 500; Dec., 1926.

The value of roentgenograms in diagnosis of the knee joint conditions is quite limited, chiefly because of lack of knowledge of X-ray interpretations of soft tissue changes. This is largely because of infrequent checking of X-ray findings against pathology made evident by opening the knee joint.

In the attempt to make visible in a radiogram the outlines of soft structures, liquids and gases have been introduced into the joint; gases are preferable, because of the greater irritation and slower absorption of liquids. The authors used carbon dioxide, because of the ready absorption and slight irritation.

The knee joint contains synovial lined cavities as follows: a small posterior and a large anterior compartment; also an extension for about an inch and a half above the patella,—the suprapatellar pouch. Stretching across the intrapatellar space can be seen the triangular fold or fat pad, supported at two sides by the alar ligaments and in the center by the ligamentum mucosum.

Soft tissue lesions which need to be diagnosed are: (1) Tears of the ligaments; (2) Displacements and tears of the cartilages; and (3) Chronic synovitis.

Technique: Under careful aseptic precautions, the tissues at the inner and lower border of the patella are infiltrated with one-half per cent novocain and a good sized needle introduced into the joint. The carbon dioxide is allowed to pass through the tube before connection with the needle, in order to clear it of air. The gas is allowed to enter the joint slowly. Should the patient show signs of syncope, the needle is withdrawn at once. To avoid trauma of the joint, the needle should not be handled unnecessarily, after introduction.

A radiogram is taken before introducing the needle: 75c.c. of gas are allowed to flow in, enough to produce a soft crepitus over the entire knee and distention of the joint. This produces some pain, which is of short duration: The needle is quickly withdrawn.

A second radiogram is taken in the same position as the first. In a normal knee, the joint area above the patella shows a gall-bladder-shaped shadow corresponding to the suprapatellar pouch. The area behind and below the patella, between the articular surfaces of the tibia and femur, is clear and slit-like. The shadow of the posterior compartment is clear and elliptical. Infiltration of the soft tissues causes diminished size and irregular outline in the shadows of these spaces. Bands may be seen crossing them. The spaces may be obliterated. Tu-

berculosis may increase their size. Cartilaginous bodies may appear. The authors have had no untoward results from the procedure. The gas is usually absorbed in from one to two days.

EYE, EAR, NOSE and THROAT

Edited by Jas. C. Braswell, M. D.
726 Mayo Bldg., Tulsa

The Etiology and Treatment of Nerve Deafness.
Emerson, F. P.: *Ann. Otol., Rhinol. and Laryngol.*, 1926, XXXV, 1098.

All acute middle ear infections are characterized by tissue reactions in the conduction apparatus and by the action of the toxin on the end-organ, causing tinnitus, vertigo, and often increased sensitiveness to loud sounds, wind, etc.

The tinnitus or sensitiveness may precede the loss in tone perception.

Tone perception is first lost in that part of the scale which is represented by the whispered voice. The patient is quite deaf before the low limits are permanently raised; that is after the subsidence of an acute tubotympanic catarrh he is quite deaf before the tube is again a factor.

In all chronic cases of middle ear deafness the loss of tone perception tends to become the same for both ears.

The loss in bone conduction is common to all chronic forms of middle ear disease and is only a step in the loss of tone perception.

The same type of hearing test with identically the same loss of tone perception in proportion to its chronicity is obtained in nerve deafness without involvement of the conduction apparatus.

In most cases of chronic deafness of any type improvement can be obtained if tone perception of the whispered voice is not below 6-25ths and if bone conduction is not decreased.

All types of deafness are prone to relapse with recurring infections.

In the treatment, all foci of infection in the body such as the tonsils, sinuses, lymphoid deposits, appendix, gall bladder, etc., should be cleared up by operation and, if necessary, repeated treatment. The eustachian tube also should be cleared up, but is usually not the primary cause of deafness. Improved hygienic conditions and the use of the radio and similar tone excitations for notes not heard are beneficial.

Nasal Sinusitis as a Cause of Toxaemia. Willcox, Sir W.: *Proc. Roy. Soc. Med., Lond.*, 1926, XIX, Sect. Laryngol., 49.

Infection of the nasal sinuses is just as important in the causation of toxaemia as is dental sepsis. The diagnosis of acute sinusitis is easily made. Chronic sinusitis is diagnosed on the basis of the history and the findings of expert examination of the nose including roentgenographic examination, transillumination, and rhinoscopic examination with puncture. From the author's experience with these cases he draws the following conclusions:

1. Nasal sinusitis is relatively common and should always be searched for in cases of toxaemia in which the cause is not apparent.

2. In cases of systemic disease which may be due to toxaemic conditions, a careful search should be made for sinusitis.

3. Nasal sinusitis is an important cause of

toxaemia. It may be very far-reaching in its effects and may cause any of the many diverse pathological conditions which are now recognized as being sometimes due to dental sepsis.

4. Nasal sinusitis, particularly in the chronic form, often requires operative treatment. Adequate treatment is imperative since the condition is a focus of infection which, if left untreated, will speedily give rise to systemic disease affecting other parts of the body.

5. In the treatment of nasal sinusitis it should always be remembered that the case is a case of toxaemia, usually streptococcal, in which the focus of infection is in the sinuses. Every case is therefore a problem in immunity.

In the discussion of this report it was brought out that only chronic cases should be operated upon; that asthma is often caused by nasal sinusitis; and that nasal sinusitis promotes a chronic toxic state by causing bronchiectasis. There was some disagreement as to the relative value of the X-ray and transillumination in the diagnosis, but it was generally agreed that neither is absolutely decisive.

The Pathology of Spheno-Ethmoidal Sinusitis. McMahon, B. J.: *Arch. Otolaryngol.*, 1926, IV, 310.

The author reviews seventy cases of spheno-ethmoidal sinusitis from the pathologist's point of view in order to determine whether or not there is any relation between the symptoms and the microscopic changes and between the microscopic changes and the end-results of operation on these sinuses. In every case the turbinate and cell walls removed at operation were fixed, embedded, sectioned, stained, and studied. From these studies the following conclusions are drawn:

1. In chronic hyperplastic spheno-ethmoidal sinusitis the microscopic examination shows thickening, sloughing, polypoid degeneration and metaplasia of the epithelium; thickening of the basement membrane; oedema, round-cell infiltration, dilatation or compression of the glands, and thickening of the blood vessel walls in the tunica propria, thickening of the periosteum; and osteoblastic activity, osteoclastic activity, fibrosis, hyperostosis, osteomalacia, and necrosis in the bones.

2. The symptoms which may be associated with these microscopic changes include headache, an anteronasal discharge, a posteronasal discharge, asthma, arthritis, failure of vision, impairment of hearing, and herpes of the second division of the fifth nerve.

3. There is no direct interrelation between the microscopic findings, the symptoms, and the results of the operation.

4. The incidence of spheno-ethmoidal sinusitis is much greater among women than among men.

5. The percentage of good results is much higher among women than among men.

6. Chronic hyperplastic spheno-ethmoidal sinusitis is a distinct clinical entity in which the operative results are attended with improvement or complete recovery in a high percentage (74.3 per cent) of the cases.

Tuberculosis of the Middle Ear and Mastoid. Spencer, F. R.: *Ann. Otol., Rhinol. and Laryngol.*, 1926, XXXV, 1073.

The author believes that tuberculosis of the middle ear is frequently not recognized because

of the absence of pain which is typical and failure to find the tubercle bacilli in the pus when a mixed infection is present.

The infection is carried by the lymph or blood stream or is spread by continuity. The discharge is seropurulent and multiple perforations in the drum occur early. Frequently, granulation tissue is found around the margins of the perforations. The mastoid is involved late and is rarely tender. From time to time the X-ray shows slight clouding. Paralysis of the facial nerve occurs in about 50 per cent of the cases and by some otologists this is regarded as pathognomonic of tuberculosis of the middle ear and mastoid. The tubercle bacillus may or may not be found. The process is more extensive in children than in adults and may involve the entire temporal bone. The cervical glands, and especially the pre-auricular glands, are usually involved. The diagnosis is based on the insidious onset, the absence of pain before the rupture of the drum, the presence of multiple perforations and pale granulations, and the finding of the tubercle bacillus.

The treatment depends upon the patient's condition and should be general and local. For the latter, heliotherapy is of great advantage; the direct sunlight or quartz light may be used. In some cases a mastoid operation is necessary.

Acute Retropharyngeal Abscess in Childhood, Guthrie, D.: Brit. M. J., 1926, II, 1174.

Guthrie reports a series of twenty cases of retropharyngeal abscess in childhood. Most of the patients were under 1 year of age.

The most characteristic symptom is difficulty in breathing. In the early stage there is a croupy cough. The temperature is seldom very high and may even be normal. Digital examination is the most certain diagnostic test, but should not be practiced unless one is prepared to care for the abscess in case it should be opened.

The abscess should be opened preferably without the use of an anaesthetic as soon as the diagnosis is made. Following free drainage, convalescence is uneventful.

UROLOGY and SYPHILOLOGY

Edited by Rex Bolend, B.S., M.D.
1010 Medical Arts Building, Oklahoma City.

Clippings from the Urologic and Cutaneous Review

Let silver salts serve you, not master you.

In old ulcers of the leg, never forget the possibility of syphilis.

Use the Wassermann, but do not permit yourself to be tyrannized by it.

Do not continue to use arsphenamine if jaundice follows its administration.

When possible in acute gonococcal complications, put your patient to bed and on a milk and rice diet.

Suspect perinephritic abscess in the presence of severe lumbar pain and a drawing up of the leg on the same side. Especially so if there has been a purulent focus elsewhere.

In defective renal function do not forget the abundant eliminative power of the skin.

Preliminary suturing of the bladder when conditions permit, does tempt one but the cautious man will drain for a few days at least.

Do not be in too big a hurry to tie in a catheter after a prostatectomy. You will encourage an epididymitis and this is no insignificant thing in the aged.

In a large percentage of cases gonorrhea is over-treated. If you have cases that possibly fall into this category, suspend treatment of them for a while. They may surprise you by getting well.

You are not warranted in making a diagnosis of vesical stone on sudden interruption of the stream. Other conditions may show this same symptom and besides there are far surer means of diagnosing stones.

If, following an external urethrotomy, a sinus persists, examine the canal anterior to the sinus for obstruction. Very often you will find one. Dilation of the canal and touching the sinus with nitrate of silver will usually cause closure of the sinus.

Remember that surgical lesions of the kidney do not ordinarily cause a high blood pressure even when far advanced. Therefore when confronted with hypertension look out for a medical kidney even though a concomittant surgical lesion is known to exist.

Remember that the time to cystoscope a patient with hematuria is while the bleeding is going on. The sight of blood coming from a ureteral orifice is direct evidence, whereas the presence of blood in urine drawn through a ureteral catheter is of very doubtful significance.

A slowly healing sore on the finger of a physician, dentist or nurse should immediately arouse suspicion of syphilis. A dark-field examination should be done at once. Failure to suspect the true character of such lesions may cause the loss of much time. Not an hour should be lost in beginning the treatment of acute syphilis once a positive diagnosis is made.

Syphilis of the nervous system may be over-treated to the patient's great disadvantage. Too energetically applied treatment in nervous syphilis may break down the already reduced resistance of the patient and encourage the rapid progress of the infection. In these manifestations let your aim be to hold the process in check. This plan will probably accomplish much more for the patient than heroic, slap-bang methods.

Immunity in syphilis influences the prognosis, therefore, largely by the role it plays in the production of latency, even though it is insufficient for bringing about a spontaneous cure of the disease. Chemotherapy bears an important relation to this immunity and to prognosis, because, while adequate treatment may cure the disease, in a clinical sense, at least, inadequate treatment may reduce the immunity and fail to cure, yielding only temporary beneficial results and a false sense of security.

BACTERIOLOGY, PATHOLOGY and PUBLIC HEALTH

Edited by Drs. L. A. Turley and Gayfree
Ellison, Norman, Oklahoma

Dermatitis Venenata—Observations Upon the Use of a Modified Extract from Toxicodendron Radicans. Spain, W. C. and Cooke, Robert E. *The Journal of Immunology*, Vol. XIII, No. 2, Feb. 1927.

The use of 95 per cent ethyl alcoholic extract of the fresh leaves of *Toxicodendron Radicans* will produce typical "poison ivy" dermatitis, and varying amounts of protection in susceptible individuals may be conferred by the hypodermic injections of such alcoholic extract.

The extract was made as follows: of the fresh leaves of *Toxicodendron Radicans* were extracted in 95 per cent ethyl alcohol in the proportion of one gram of leaf to 3 c.c. of alcohol in the icebox for 72 hours. Extract filtered through filter paper. A dilution of 1:100 of this extract would give a vesicular eruption on the skin of a susceptible individual.

This extract proved to be quite unstable, deteriorating in four to six months. A heavy black precipitate formed which was thought to be the oxidized toxin, and that this oxidization was due to or hastened by an active enzyme or oxidase found in the plant.

As it had previously been shown that enzymes are active only when water is present, it was thought that an extract could be made free from water.

The following procedure was then carried out:

The leaves were collected and dried in an electric oven at 50 degrees C. for 72 hours. It was found that all the moisture, about 66 per cent of the total weight, could be removed from the leaf. These dried leaves were then pulverized and extracted in absolute ethyl alcohol in the proportion of 16 sgms. of leaf meal to 150 c.c. of alcohol for 72 hours.

This extract was found to be more potent than the green leaf extracted with 95 per cent alcohol. The dry leaf, or water-free, extract was found to be stable. Fifteen c.c. of the extract was placed in a bottle, lightly corked, and placed on the laboratory shelf for 12 months. During that time, there was a slight change in the color, from light grass-green to a dark, dull color. The extract was clear and no precipitate. There was no deterioration in the potency of the toxin as compared with freshly made extract. Not only did the water-free extract of the leaf meal prove stable, but the leaf meal itself, when properly sealed and kept dry in the presence of calcium chloride for 12 months, was found to be as active as the freshly dried leaf meal.

The nature of the active principle is generally considered to be an acid resin. This acid resin could be obtained in comparatively pure form by evaporating the alcoholic extract in a slight vacuum at room temperature in an atmosphere free from oxygen. The residue obtained is an amber colored oil.

A dilution of 1:100,000 of this residue in alcohol would give a typical reaction in susceptible individuals.

A skin test for susceptibility to poison ivy was attempted and proved of value. The diluted (1:100) water-free extract was applied to the skin on a small disk of blotting paper and cov-

ered with adhesive plaster. The moderately sensitive, highly sensitive and mildly sensitive could be definitely located by the amount of reaction produced.

The dermal test proved of especial value in the diagnosis of chronic ivy poisoning treatment.

Immunity to poison ivy may be developed by the use of the extract administered orally or by hypodermic injections. Schamberg has described successful immunization by the use of oral administration of ascending doses of tincture of poison ivy.

The authors were successful in immunizing patients by the oral administration of a dry preparation of poison ivy toxin. The alcoholic extract was mixed with milk sugar, dried at room temperature and administered in capsules or tablet form. One-tenth of a c.c. of a 1:100 dilution of the alcoholic extract per tablet seemed to be the most suitable dose.

The advantages of this method over the oral administration of the tincture are that the product does not deteriorate, and there is little danger of producing fresh lesions on the skin as occurs occasionally with the tincture.

To produce satisfactory immunity by the oral treatment, daily doses over long periods of time are necessary, and the average patient will not continue consistently.

The hypodermic injection of the water-free alcoholic extract of poison ivy is more satisfactory, either as a prophylactic or phylactic treatment. As a prophylactic treatment, the initial dose is usually 0.1 c.c. of the highest dilution of the ivy extract that will give a positive skin reaction. The injections should be weekly for four or five weeks, then once every two to four weeks throughout the season. There is a gradually increased dose. In order to lessen the pain of the alcoholic extract, it may be diluted with physiological salt solution. The following chart suggests the dosage:

Injection	Poison Ivy Extract	Quantity Injected	Sterile Saline Solution
	Dilution		
1st dose	1:100	0.1 c.c.	0.9 c.c.
2nd dose	1:50	0.1 c.c.	0.9 c.c.
3rd dose	1:20	0.1 c.c.	0.9 c.c.
4th dose	1:10	0.1 c.c.	0.9 c.c.
5th dose	1:5	0.1 c.c.	0.9 c.c.

After the maximum dose is reached, this should be maintained throughout the season.

When using the alcoholic extract, care must be taken so as not to allow any of the extract to come in contact with the skin as a reaction will result.

Results of treatment: One hundred and twenty-five individuals were given prophylactic treatment. Of these, the complete records of ninety-eight were available. Of these 59 per cent remained free from all symptoms, although exposed. Thirty-six per cent showed lessened susceptibility. Five per cent showed susceptibility when exposed.

Scarlet Fever Outbreak Due to Infected Food. *American Journal of Public Health*. Vol. XVII, April 1927, No. 4. Clarence L. Scamman, M. D., Herbert L. Lombard, M. D., Edith A. Beckler, S. B., George M. Lawson, M. D.

This report is forth coming from an investigation by the Massachusetts department of public health, when large numbers of cases of scarlet fever were reported from Weymouth, Salem and Lynn. It was discovered that all of the patients had attended banquets which had been served by

the same caterer, who served seven banquets on this day. Only the people from three, however, contracted the disease. A study of the foods served showed that lobster salad was the only dish served exclusively to all the banquets, and also was the only food that showed a difference of percentage in sick and well persons, out of those who had eaten it. A table prepared from this data shows that out of 189 persons, eating the salad, 125 were sick, 64 were not. Of the 130 persons who did not eat the salads, 13 were sick and 117 were not.

On the ingredients which composed the lobster salad, it was found that only one source of infection was possible. This was from lobster meat which had become infected between the time it was cooked and the time it was mixed in the salad. This indicated that one of the employees, who had assisted in the preparation of the food was a carrier of the disease. It was impossible, however, to pin this on any one of them, for several showed the presence of hemolytic streptococci in their throats, and it was impossible to say whether they had carried the germ before the epidemic or not.

It was suggested that some of these cases were not typical cases of scarlet fever, as some did not have a rash, but only had a sore throat. But investigation and study of 5 cases point out that they were slight cases of scarlet fever. For example: A, age 21 years, and B, age 12 years, sisters, developed typical scarlet fever from contact with their mother, who only had sore throat, and who had received infection from the lobster salad.

Summarizing, we may state, 138 of 592 people attending the banquets, developed illness. Ninety-eight cases were undoubtedly scarlet fever. The source of infection was shown to be due to infection of the lobster meat, the infection lasting long enough to infect the people partaking of the salad.

"Ureteral Dilation of Pregnancy: Autopsy Findings."

"Carson, in the Journal of Urology, says that ureteral dilatation with stagnation of urine in the ureter and kidney pelvis during pregnancy has been attributed by many observers to compression of the ureter by the enlarging uterus.

"In a study of a large number of sections from the ureters in cases of ureteral dilatation of pregnancy coming to autopsy, Carson found in primiparae a definite edema in the mucosa, tunica propria, and inner half of the muscular layer with a moderate infiltration of small round cells, mononuclear wandering cells, and a few polymorphonuclear leucocytes. In multiparae, the sections showed a thickening due to a previous inflammatory reaction with super-imposed edema and congestion.

"Pregnancy apparently causes a dilatation of the right ureter and, in a large percentage of cases, a bilateral dilatation due to pressure on the ureter, with a secondary inflammatory reaction in the ureteral wall. If pyogenic bacteria are carried to the ureter by the blood stream or lymphatics, they find favorable conditions for their growth and there ensues a marked acute inflammation which may be followed by the formation of scar tissue giving rise to stricture."

Renal Glycosuria and Pentosuria

Jones and Sussman assert that the differential diagnosis between renal glycosuria and diabetes mellitus is made by the blood sugar estimation; the blood sugar tolerance test, and the estimation of the respiratory quotient after carbohydrate ingestion.

164,002 PHYSICIANS IN NEW AMERICAN MEDICAL DIRECTORY

For more than twenty years the American Medical Association has been publishing a directory of the medical profession. Ten editions have appeared, the last one (1927) being just off the press.

The first edition (1906) contained 128,171 names of physicians in the United States, its dependencies and Canada. The new Tenth Edition includes 164,002 names. There is an increase of 2,644 over the previous edition. If the Directory were merely a list of names and addresses of physicians it would not have great significance. That information is valuable, but of far greater value is the fact that the Directory gives proof of the right of each physician listed to practice medicine—namely, time and place of graduation and year of license. In addition, society membership, specialty and office hours are included. Capital letters indicate those who are members of the county medical society, and a special symbol follows the names of those who are Fellows of the American Medical Association.

The information concerning hospitals and sanitariums of the United States is another valuable and extensive feature. Descriptive data appears following the names of 7,816 hospitals and sanitariums such as type of patients handled, capacity, and name of superintendent or director.

The list of physicians in each state is preceded by a digest of the laws governing medical practice in that state; members of licensing board; state board of health; names of city, county and district health officers; officers of constituent state associations and component county and district medical societies. The book, in short, is one vast source of reliable data concerning the personnel of the medical profession and the institutions and activities closely related to it. It contains 2,575 pages and is sold for \$15.00. Published by the American Medical Association, 535 North Dearborn Street, Chicago.

W. A. ROSENTHAL X-RAY COMPANY announces a free practical course in X-Ray and Physical Therapy at the Hotel President, Kansas City, Mo., August 29, September 2. The course is sponsored by the W. A. Rosenthal X-Ray Co., Dick X-Ray Co., Magnuson X-Ray Co., and the H. G. Fisher Co. All ethical physicians will be given an opportunity to secure free instructions in Physical Therapy. Elaborate exhibits of the latest types of X-Ray and Physical Therapy equipment will be shown. Six thousand physicians in Oklahoma, Kansas, Missouri and Arkansas are being circularized. No applications will be received except from practicing ethical physicians.

BOOK REVIEWS

THE DISEASES OF INFANTS AND CHILDREN. By J. P. Crozer Griffith, M.D., Ph.D., Professor of Pediatrics in the Graduate School of Medicine of the University of Pennsylvania, and A. Graeme Mitchell, M.D., Professor of Pediatrics, College of Medicine, University of Cincinnati. Second Edition, Reset. Two octavo volumes totaling 1715 pages with 461 illustrations, including 20 plates in colors. Philadelphia and London: W. B. Saunders Company, 1927. Cloth, \$20.00 net.

Volume one of this new edition is divided into chapters on Anatomy and Physiology of Early Life, Hygiene, Breast-Feeding, Artificial Feeding in the First Year, Foods Other Than Milk, Special Named Mixtures and Proprietary Foods, Diet After the First Year, Diet in Sickness, Characteristics of Disease in Infancy and Childhood, Symptomatology and Diagnosis, Morbidity and Mortality and Therapeutics of Early Life.

Volume Two has Sections devoted to Diseases of the Digestive System, of the Respiratory System, the Circulatory System, Genito-Urinary System, Nervous System, Diseases of the Muscles, Bones and Joints, Diseases of the Blood, Spleen, and Lymphatic System, Diseases of the Ductless Glands and Internal Secretions and on the Skin, Eye and Ear. These Sections are numerous subdivided into chapters under the appropriate heading. The two volumes are virtually a "System on Pediatrics," worthy of honorable place in any medical library..

Perhaps no branch of medicine has made greater advancement in the last few years than has the subject of the Diseases of Infancy. The advances and successes achieved in the science of infant feeding alone has certainly saved thousands of lives of infants, who, within the span of a few short years in the past would have been lost. These were surrounded by a maze of helplessness and misunderstanding upon the part of physician, nurse and parent. Now much of this, thanks to advances, has been remedied and the case formerly considered hopeless does not present the dangerous outlook and alarm as before. This work is copiously enriched by the large number of foot-notes—references to the literature of the subject. Systems of measurements are given both in the English and metric. Wherever necessary, temperature charts and similar aids, as well as illustrations, some in color plates, are included. Nearly one hundred

pages are devoted solely to the question of feeding under different conditions met, normal and abnormal, and the gradations between the two.

THE MODERN PRACTICE OF PEDIATRICS. By William Palmer Lucas, M.D., LL.D., Professor of Pediatrics, University of California Medical School; Physician in Chief, Children's Department, University of California Hospital; Consulting Physician, Baby Hospital, Oakland, California; Visiting Physician, San Francisco, Hospital for Children, and San Francisco Hospital; Author of "The Health of the Runabout Child," "Children's Diseases for Nurses," etc. Embossed Cloth, 962 pages, thoroughly illustrated, 1927. The MacMillan Company, New York.

Illustrations in this work are originals, not heretofore published, which adds to its interest. As to be expected, greatest stress is laid upon nutritional problems. Evidently the author is an enthusiast in his chosen field, for throughout the text there is noted much of the intimate personal touch, or what might better be termed a delightful conversational tone. He manages to say a great deal too, in few words. These make the book one easy to read and digest. He also goes to great length in comparisons between the normal and abnormal, holding it a necessity to have such comparison always in view in order to fully appreciate pathologic conditions.

TIGER TRAILS IN SOUTHERN ASIA. By Richard L. Sutton, M.D., Sc.D., LL.D., F.R.S. (Edin.) Fellow of the Royal Geographical Society; Professor of Dermatology, University of Kansas; Special Representative, Department of Natural History, University of Missouri. Cloth, 115 illustrations, 207 pages, Price, \$2.25, 1927. C. V. Mosby Company, St. Louis.

We handed this volume to one of our local sportsmen, who coincides in our opinion that the present volume is not as detailed or exhaustive as Dr. Sutton's charming story of his African hunting trip of a few years ago. However, conditions were very different and probably called for different treatment. The lover of outdoors enjoys every little detail, and it must not be forgotten that usually the pleasure—to most of us in these matters—lies in anticipation of the trip, rather than actualities as to the size of the fish, or the fight that actually occurs, so, one enjoys reading with avidity just what to get, where and how to get it, even if the imported "Holland" does cost something like five hundred dollars, a price some of us hesitate before paying for a proper sort of elephant destroyer. Dr. Sutton's story carries us to a corner of the world

perhaps less known and thought about than any other—French-Indo China. To those who enjoy glimpses of the Orient and the unusual, this volume will appeal.

THE SURGICAL CLINICS OF NORTH AMERICA. (Issued serially, one number every other month.) Volume 7, Number 2. (Cancer Number—April, 1927.) 231 pages with 113 illustrations. Per clinic year, (February 1927 to December 1927.) Paper, \$12.00; cloth, \$16.00 net. Philadelphia and London: W. B. Saunders Company.

This issue should prove interesting to those worrying over the problem of cancer, especially of the proper course to follow in treatment. Among the contributions are: "Clinico-Pathologic Conference on Tumors," Drs. E. B. Krumbhaar, E. S. Clayton and S. W. Mulholland; "Giant-Cell Tumor of Bone," J. L. Goforth; "Radiation in Gynecology," Chas. C. Norris and M. E. Vogt; "Cancer," involving the sinuses, tonsils, larynx, and ear, Fielding O. Lewis; "Consideration in the Use of Radium and X-rays, J. L. Weatherwax and H. M. Sharp; "Gastrostomy for Cancer of the Esophagus;" "Irradiation Therapy with Fractional Doses of X-Ray," J. D. Morgan and R. A. Bradley; "Treatment of Cancer by Irradiation Methods," Henry K. Pancoast; "The Diagnosis of Early Cancer of the Breast," John Berton Carnett; "Multiple Primary Tumors of the Skin," P. O. Snoke and W. P. Belk, with an additional article by Dr. Belk on "Branchiogenic Tumors of the Neck." Naturally there should sooner or later get to be some agreement upon the proper course to follow in the treatment of cancer, pre-cancerous, incipient or beginning, developed, too far developed, and the utterly hopeless cases. It is regrettable that in the literature of today we see too much of the chasing of the "Will o' the Wisp." Too much of the premature announcement of success, which time proves to be worthless. As the matter now stands there is only one course to follow. Depend upon no one rule or system. Every case should be handled with its stage in view as well as its action under given circumstances.

OBSTETRICS FOR NURSES. By Joseph B. DeLee, M.D., Professor of Obstetrics at the Northwestern University Medical School; Obstetrician to the Chicago Lying-In Hospital and Dispensary. New (8th) Edition, Revised. 12mo of 635 pages, with 266 illustrations. Philadelphia and London: W. B. Saunders Company. 1927, Cloth, \$3.00 net.

In this revision the author found difficulty in omitting matter in order to include

new matter. Several illustrations, obsolete are omitted to give way to such timely subjects as the iodine and mercurochrome preparations of patients, Gwathmey's synergistic obstetrics analgesia, identification of newborn babies in busy maternities, a matter of more importance, and more subject to human error than one would first imagine to be possible. No one speaks with more force and authority on the subjects of obstetrics and its problems than does Dr. DeLee.

CITY HEALTH ADMINISTRATION. By Carl E. McCombs, M.D., National Institute of Public Administration and New York Bureau of Municipal Research. In three parts: Part 1, Municipal Health Functions; Part 2, The Organization and Administration of Sickness Preventive Functions; Part 3, The Organization and Administration of Sickness Treatment Functions. Cloth, 524 pages, New York, The MacMillan Company, 1927.

The wide growth of public health functions and administrations within the last few years necessarily has brought to the fore certain rules of administration, which are becoming to be recognized as the arbiter dictum if the best results are to be obtained. This volume is a serious, well arranged and comprehensive discussion of the phases and problems to be met by the health officer. It should find a good reception from those interested in such work. It is regrettable that a copy cannot be placed, with assurances that it shall be read and studied, into the hands of city and county commissioners, as well.

HOW TO MAKE PERIODIC HEALTH EXAMINATIONS. By Eugene Lyman Fisk, M.D., Medical Director, Life Extension Institute, and J. Ramser Crawford, M.D., Assistant Medical Director, Life Extension Institute; Foreword by Major General Merritte W. Ireland, Surgeon General, U. S. A., Cloth, Illustrated, 393 pages, 1927. The MacMillan Company, New York.

No single subject affecting the medical profession and the general public has aroused so much comment and interest as the subject of periodic health examinations. This volume systematizes the work, advising exactly the procedure believed best to follow. It is profusely filled with charts and tables for the guidance of the examiner. One thing stressed that is yet not thought of by many physicians is that these examinations are not for the ill, but for the healthy, and for the purpose of discovering injurious habits of living and slight or beginning functional or structural abnormalities in order that grave end results may be prevented or postponed.

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VINCENT'S DISEASE*

D. D. MCHENRY, M.D.
MEDICAL ARTS BUILDING
OKLAHOMA CITY

This condition has commonly been called Vincent's angina. As we have learned in the last ten years, that besides the angina, there are many other diseases caused by this peculiar form of bacteria, I think a better term for it is Vincent's disease—hence the heading.

HISTORY

Vincent published his first report with demonstrations of the bacillus fusiformis and spirochete, or spirilla in the Archives Internationales de Laryngologie in 1898, and has been given credit for the discovery of the combination of these two bacteria as causing this peculiar disease.

His priority is disputed. An American dentist, Dr. Miller, described the bacillus fusiformis in 1883, and noted its appearance in both dirty and clean mouths. Ranchfus, in 1893, wrote concerning it. The first real article was by the German Plaut in 1894. And this is called the Plaut-Vincent angina by the Germans. Eichmeyer wrote a lengthy article on the priority in 1904. However, Vincent wrote several articles from '96 to '98, and really made the first extensive study of the condition, or at least of the symbiotic action of the two forms of bacteria.

The first case in this country was reported in 1902 by Emil Mayer. There were only scattered European articles on the subject until 1913, as the disease appeared only more or less sporadic.

At the beginning of the world war, it was found very prevalent among the British, French and German troops, and was called trench mouth. Bouty, in 1917, wrote a very extensive article following his study among the British troops, and reported that twenty-three per cent of the infections of the mouth

were due to this condition. Between that date and 1922, more than 150 papers were written on the subject. Only a few articles since that date.

DESCRIPTION OF DISEASE

The local mouth lesion is divided, by most writers, into two general headings.

(a) Superficial, Pseudomembranous or Diphtheroid form. This is the form that attacks the gums and the mouth—the stomatitis cases. It is characterized by a thin grayish white membrane usually starting at the roots of the teeth, or inside the lips on the tongue, and gradually spreading to surrounding tissues, occasionally found on the tonsils. The membrane is easily removed, leaving a raw bleeding place; a very shallow ulceration. This type resembles the streptococcic membrane, having a thin feathery edge, rather than the thick edge of diphtheria, occasionally becomes thicker like the diphtheric membrane. I think the color is more of a dirtier gray than that of either diphtheria or streptococcic infection. The symptoms in this form are usually more mild, with no temperature; very light glandular involvement. I have seen but little of this form.

(b) The second division, the ulcerative type, is the more common form. As its name implies, it is a distinct ulcer of varying depths, often rather shallow, and when it is covered with a thick membrane resembles the diphtheritic membrane. It comes off rather easily, leaving a raw granular, bleeding surface. More often in the more severe, deeper ulcers they are covered with thick, creamy or yellowish exudate; hardly the consistency of a membrane, easily wiped off and covering the same bleeding, granular surface. Often the ulcers have abrupt edges, crater-like or the punched out appearance of the syphilitic ulcer, especially when situated on the tonsil or roof of the mouth. Untreated, these ulcers become very deep, and destroy much tissue.

The patient has all the symptoms of severe stomatitis or sore throat; pain, sore-

*Read before the Section on Eye, Ear, Nose and Throat, Annual Meeting, Oklahoma State Medical Association, Muskogee, May, 1927.

ness, difficult swallowing, etc., submaxillary and sublingual glands are enlarged and often tenderness of other lymphatic glands of the body.

The disease usually comes on suddenly with slight, if any, malaise, usually some headache and backache, often transient albuminuria. Blood culture negative. No increase of W.B.C. In fact very few systemic symptoms in the mouth cases. Disease is more prevalent in February and March. Though usually a mild disease yielding to different treatment, it is often a very serious condition. Many think the Noma of infants were of Vincent's infection.

Many fatal cases have been reported by Bruce, Meyer, Mayer, Halstead, Theisen, and others in this country in the past ten years. And incidentally all of them included in their treatment, local or intravenous use of salvarsan, or neosalvarsan.

When I was in Vienna in 1909, about the time of the discovery of the Wassermann reaction, I saw a few of these severe cases which were considered incurable by the men there at that time. They did not know what to do with them, and used everything. I watched one case for a month gradually get worse; the center of attraction of a group of doctors every time she was in the clinic. I left before the termination of the case, and never knew if she got well or not, but should judge not.

Observers do not all agree as to which tissues of the mouth are most often affected. In my experience, the tonsils are most often affected; next, behind the third lower molars; third, the teeth and gums and fourth, general infection of the mouth.

Other tissues besides the mouth are very often affected. Davis and Pilot, in a very extensive study of the bacillus fusiformis and Vincent's spirochete, besides the usual infection in the mouth, found that a putrid pneumonia and lung gangrene were often associated with Vincent's. This form has a peculiar odor, difficult to describe, but characteristic; readily distinguished from *B. coli* odor, and pyocyanous abscess. They also found the Vincent's organisms in many cases of putrid otitis media. These cases were all of long standing, varying from ten to twenty years. They also found other putrid and gangrenous wounds caused by teeth to be full of these organisms.

They cited a case reported by Hultgen. A partial gangrene of the finger of a girl

who habitually bit her finger nails. *Bacillus fusiformis* and spirochetes were demonstrated in the wound and about the carious teeth. Peters also reported a similar case. The same organisms were found in several cases of gangrenous balanitis studied by them at the Cook County Hospital. In pathological lesions of the appendix these organisms have been found, especially in gangrenous appendices.

Dr. John T. Kuhn of Oklahoma City, had a case of severe intractable bronchitis in which the sputum was loaded with Vincent's bacteria. Cured by the intravenous use of neosalvarsan.

Otoni of Brazil reported a case of gangrenous perichondritis and otitis media in a child from fusospirillar infection, that had extended from the throat. Almost the entire external ear and the rear wall of the external canal sloughed off. He treated it with a solution of chlorinated lime and balsam of peru, and the intravenous injections of neosalvarsan. The ulcers healed but the child died from exhaustion.

Dr. E. M. Burns of California, has made an extensive study of this condition, and thinks that Vincent's organism may be responsible for many diseases of the body, such as anemia, dysenteric-enteritis, dermatoses and pyorrhea.

Three patients with well marked anemia, apparently secondary to some systemic infection, had dirty mouths which proved to be heavily positive to Vincent's organism. One was rheumatic, one had been diagnosed as tubercular, and one had marked symptoms of gastro-intestinal disturbance. No T.B., no gastro-intestinal pathology and no other cause for the anemia; all rapidly improved under treatment of the Vincent's.

Small ulcers around or under the prepuce, and the vulva around the clitoris were often found to swarm with bacillus fusiformis and spirilla. Also found many times in smegma with no ulcers.

Dr. S. P. Bond of Little Rock, Ark., reports a case of ulcer at the mucocutaneous junction of the foreskin, which rapidly spread with the formation of two more ulcers. There was marked edema, the ulcers had a grayish, sloughing bottom, ragged, irregular, undercut edges, with a foul discharge. Glandular enlargement was not present. A smear from the exudate of this lesion stained with Gram's stain, showed the fusiform bacillus, and a larger spirilla characteristic of the forms design-

nated by Flugge as vibrious. Intercourse was admitted by the patient, saliva having been used as a lubricant.

DIAGNOSIS

The diagnosis is relatively easy. With the microscope the bacillus fusiformis and the spirilla are readily distinguished. The dark field illumination is very valuable in distinguishing this spirilla from the spirochete pallida. The membranous form is often mistaken for diphtheria. The microscope easily distinguishes between them.

In acute tonsillitis it is only rarely that the exudate from the follicles is continuous enough, or the ulcers deep enough to simulate Vincent's disease. Tuberculosis of the throat or mouth must be thought of, but too rare to be taken very seriously.

The only thing that should really cause any difficulty in diagnosis is from the ulcers of syphilis. And I know of no way clinically that it can be done if the lesion confines itself to the tonsils and pillars, or roof of the mouth, except the edge of the syphilitic ulcer is more indurated. But the microscope, with dark field and the Wassermanns will very quickly differentiate them. Will report a case later, in which the two conditions co-existed.

Wassermanns are uniformly negative, unless there is a co-existing syphilis. This is a point that has been studied very thoroughly since the disease has been treated so much by salvarsan. Many observers have wondered if it was not closely related to syphilis, as some of the first cases studied had a positive Wassermann, and it has been called the fourth venereal disease. But many men have made extensive study along this line, and the decided opinion now, is that the Wassermann is always negative in uncomplicated Vincent's disease. I could give you the results of the study of many series of cases by competent observers to prove this point. In practically all cases of positive Wassermanns in this disease, a previous history of syphilis could be obtained.

I had a case a few months ago that I was afraid was going to upset my idea of Wassermanns always being negative in Vincent's. A Miss K., however, in spite of the Miss, a divorcee, called me to see her for an exceedingly sore mouth. I found the left tonsil covered with ulcers and membrane extending over the anterior pillar and up over the soft palate with three, rather deep ulcers on the soft palate from

four to seven m.m. in diameter. There were ulcers around both lower third molars, extending forward on the cheeks for an inch. The inside of the lower lip was covered with a thin coat like the membranous type. At the tip of the tongue were several small ulcers, and a group of them extending to the frenum.

She was sent to me by one of the best ear, nose and throat men in the southwest, of Wichita, who had been giving her sodium caccodylate injections daily for six days with no relief whatever from the condition. He said he had made a Wassermann, and would report to me at once. That he had found Vincent's organisms in these ulcers. It was such a typical looking Vincent's that I told them I thought we could cure it in a few days, and did not examine her for clinical symptoms of syphilis. I put her on my "pet" treatment which relieved the soreness very materially by the next day, but I had a report from her Wichita doctor that she had a four-plus Wassermann.

As I saw the patient the first day at her home, I only brought a smear for the laboratory, which they reported positive to Vincent's. At the second visit I took scrapings to the laboratory which they examined very carefully with dark field, and found them full of Vincent's spirilla, but no spirochete pallida. I thought his report was probably a mistake in laboratory diagnosis, and asked for another Wassermann, which was had at the Medical Arts Laboratory, and came back four-plus. But the condition of the throat was very, very much better the third day. I again took scrapings to the laboratory, and dark field failed to find any spirochete pallida.

I began to hunt up the history of the case from the family, and other physicians who had treated her, and found she had been infected months before, and the syphilographer who now has the case, said the condition might, and should have been known by the clinical symptoms. On the fourth day another scraping was examined, and were unable to find either Vincent's or spirochete pallida. The acute inflammation was all out and the patient able to eat with comfort, and six days after I first saw her, the ulcers were almost entirely healed. She is being treated by one of our syphilographers. I am certain this was a case of superimposed Vincents on an old tertiary luetic infec-

tion and the lues had nothing to do with the ulcers on the throat.

Though rather easy to diagnose the organism of this disease from others, to establish a diagnosis, and so use a proper treatment, the real thing in studying this question is if this fusospirilla is all of the real cause of this disease. Many think not, as they are very often found in healthy mouths.

Westlake of St. Louis, in an able paper on treatment questions if the symbiosis of these two bacteria are sufficient alone to cause the disease. He found all his cases associated with some form of streptococcus. As the streptococci is so frequently found in the mouth, it is hard to prove whether it has any relation to the fusospirilla or not. It should be studied in those forms of the disease found elsewhere than the mouth, to determine this point.

Dr. Henry Christian of Boston, in the discussion of a paper of Drs. Barker and Miller, reporting a case of perforation of the palate from Vincents, before the A. M. A. in 1918, repeated the question, if these organisms are the cause of this disease. He said, "it seemed to him there was considerable reason for doubting that these bacteria were the cause of the condition. One observer had frequently found amebas. Are amebas the cause? You nearly always find some other bacteria as streptococci. Are they the cause. Or is there something else which is the cause? And ended by saying from his personal ideas and experience, he does not think we know."

Then there has been quite a difference of opinion, if the bacillus fusiformis and spirilla were two separate bacteria or different forms of the same. Tuncliff thinks she definitely proved the spirilla was a more highly differentiated form of the same organism.

Mikel says that though the cultures show that bacillus fusiformis and spirilla are different forms of the same organism, but whether the spirilla formed from bacillus fusiformis are the same as those found in the lesions themselves, cannot be proven as no one has ever been able to reproduce the lesion in experimental animals. So I think much remains to be done by our bacteriological experimenters on this subject.

Personally, I agree with Westlake and Christian, that there are some other organisms besides the bacillus fusiformis and spirilla in these lesions. And I think the

younger members of the society, if not we older ones, will live to see some other specific bacteria found working in symbiotic action with the Vincent's organisms to cause this disease, and am rather inclined to think it will be a form of streptococci.

The following case will illustrate the point: On March 30, 1922, I was called to the obstetric ward at St. Anthony's Hospital to see a Mrs. H., who was there for confinement; a patient of Dr. Allen.

She told me she had had a sore mouth for three days; too sore for her to use her toothbrush. There were ulcers around the upper eight front teeth; an ulcer 6 mm. in diameter in the roof of her mouth, and ulcers posterior to both lower third molars, covered with grayish membrane, and so sore she did not want to eat. Clinically, a typical "trench mouth" case. She had been using alum, and the interne used chlorate of potash solution the twenty-four hours she had been in the hospital. A smear and culture showed many streptococci and staphylococci, especially the former, being very abundant in the culture, but no Vincents. The preponderance of streptococci worried us, as we expected her confinement at any time. In this case, besides the 10 per cent copper sulphate, we also used some iodine and an alcohol mouth wash, as well as the perborate of soda.

The soreness was out in three days, but the ulcer did not heal for five or six days. But she passed successfully through her confinement three or four days later, with a fine healthy boy, and no infection. This is a typical case that would have been diagnosed as "trench mouth" during the war. It is possible the bacillus fusiformis and spirilla had been killed before we got a smear or culture, but the only thing we could find was streptococci, yet clinically it was a typical case of trench mouth.

TREATMENT

It is because of my ideas of treatment that I especially wrote on this subject. In the earlier cases, most everything was used, especially the caustics of all kinds, silver, zinc, sulphate, iodine, several acids, etc. A lotion consisting of:

H2O2	5 ozs.
Wine of Ipecac	3 drams
Glycerine	5 drams
Water Qs.	8 ozs.

to which was added by some a small amount of Fowlers' solution; was considered by many to be almost a specific for a

number of years. Sodium hypochlorite is often used. Nitrate of silver is lauded by many men as very valuable.

Blair in his text book strongly recommends methylen blue. I think it is one of the valuable drugs, as is H₂O₂, or any of the oxidizing agents.

Westlake of St. Louis, says the best treatment is tonsillectomy if nothing but the tonsils are involved, especially in the recurrent cases. He reports fifteen cases in detail with relief from symptoms, no recurrence. *Bacillus fusiformis* and spirilla almost immediately disappeared, for which he could give no explanation, and thinks his work opens a new field for study of the etiology of Vincents.

W. E. Camp, of Minneapolis, also removed the tonsils from five cases during active ulceration for study with no bad results. Charles R. King (of whom I will speak later) thinks it well to enucleate tonsils in recurrent cases, but not sure it is devoid of danger. Two cases of infection of the tonsillar wound following tonsillectomy have been reported by C. M. Von Poole of Honolulu.

Starke of El Paso, 1915, came out with an excellent article, claiming these cases could all be cured with strong gargle and local application of perborate of soda. I treated a number of cases for several years with fairly good results with this line.

Salvarsan or neosalvarsan has been used since 1917, and probably before. The earliest I could find it recommended was that date. It is used as a swab in both watery and glycerine solutions and intravenously. And there are many reports in the literature of excellent results with this treatment, and is considered by many clinicians as a specific. Nevertheless I want to protest against its use in the local lesions that can be gotten at with topical applications.

In internal lesions certainly it is our best treatment, such as the case of bronchitis of Dr. Kuhn's. But as I remarked earlier in the paper, there are quite a number of fatal cases reported that were treated with this line.

I protest its use in local lesion for the following reasons: First, it is very much more expensive, and not as efficacious as other things. Second, intravenous injections are not without some danger. I do not want anything put into my own veins when other things applied locally will do just as well or better. Third, its use will

often put a stigma on a patient that does not deserve it, as many of the laity think that treatment is used only for syphilis. Robert (Laryngoscope 1924) reports two suits for divorce because of its use for Vincents, and also reports a male student expelled from one of our national institutions, and the entire course of his life changed because of this treatment of his pharyngeal Vincents lesion. Fourth, many serious reactions and a few deaths have been attributed to its intravenous use. (Camp says it is the poorest of treatments).

So why subject your patient to these physical and social dangers, when another line, or lines of treatment are just as good and, in my opinion much better. I refer to the use of copper sulphate in 10 per cent aqueous solution.

It is not original with me at all. Dr. Charles R. King of Toledo, Ohio. (Laryngoscope, Dec. 1921,) during the late war, was treating a number of cases at Camp Sherman Base Hospital, with iodine and silver. When they came for treatment, one day, both these bottles were empty. To stop to refill them just then would have taken valuable time, so he painted them with the thing most handy, a 10 per cent copper sulphate solution. They were so much better the next day that he finished these cases with this treatment, and treated many more the same way, both during the war and in his private practice. He reported this in December, 1921, about the time I had decided that perborate of soda alone would not cure all these cases. I paint the lesions one or two times daily with this 10 per cent watery solution. If the lesion is on the tonsil I have my cotton swab wet enough that I can squeeze the solution down into the follicles and deep recesses of the ulcer. If over large follicles, I take a very fine swab and go down into them and try to get the solution to the depth of any area involved, including any cavities in carious teeth. I continue the perborate of soda as a gargle. Teaspoonful dissolved in two-thirds teacup full of hot water used frequently every two or three hours.

I have failed to find a case since then, that was not complicated with syphilis or something else that this does not cure. Much of the soreness is gone in twenty-four hours, and the patient able to eat in comfort in forty-eight hours, and sterile as far as *bacillus fusiformis* and spirilla are concerned, in three or four days.

Certainly it takes time to heal a deep ulcer, and none of us would think of healing them in three day's time, but as I said above the soreness is gone and the patient is comfortable in three or four days' time, with this line of treatment.

This little article by King is the only thing I have seen in literature on the use of this drug in this disease, except in the discussion of the same paper of Baker and Miller, in which I quoted Dr. Christian's discussion; Dr. Overman of St Louis, reported the same excellent results in the treatment of this disease, with 15 per cent copper sulphate solution.

I am not a chemist, but as the bacillus fusiformis and spirilla are anaerobic bacteria, they are best destroyed by an oxidizing agent, and copper sulphate is one of the best. Vincent's angina is becoming more prevalent and I sincerely hope you will try out the copper sulphate treatment in your local lesions, at least before you use salvarsan, and so save your patient the stigma of having had syphilis, and the danger of intravenous injections.

EFFECTS OF ELECTRIC FLASHES ON THE EYE*

W. ALBERT COOK, M.D., F.A.C.S.
TULSA

In this age of electricity we are often called upon to treat eyes which have been injured by electrical flashes among the electricians who did not have their eyes protected by tinted glasses. The first thing we notice in a case of this kind among these patients is the photophobia, as they usually come into the office wearing colored glasses, a hat pulled down over their eyes, or a handkerchief tied over their eyes and someone leading them; there is increased lachrymation and pain, depending upon the voltage of the electric flash.

In the milder cases the condition of the eyes resemble those we had during the war among our soldiers who were slightly gassed, but in those who were extensively gassed, the conditions were considerably different and there was more of a chemical action on the external coats of the eye than there is from a single flash of electricity. The lids are usually swol-

len a few hours afterwards and quite hyperemic.

Most of our text books refer to this condition as ophthalmic electrica, and compare it to snow blindness which is very prevalent in the winter in the northern and mountainous parts of the United States. When the flash of electricity is very strong we get a retinitis which sometimes lasts for a considerable period, and cases are reported where the flash of light is so intense that the crystalline lens become opaque causing a complete cataract.

Dr. Ferendez, of Havana, Cuba, reports that he has seen a number of injuries to the eye from lightning similar to those caused by looking at an eclipse of the sun without a colored glass. In cases where the flash is close enough we get chemosis of the cornea which sometimes is so opaque that the cornea has the appearance of interstitial keratitis. In some of these cases the pain is almost as severe as acute iritis, but while atropine will relieve the pain caused by iritis if used early enough, it has the opposite effect on the pain caused by electricity; as dilating the pupil lets more light into the already inflamed retina, which is one of the things we must avoid, and sometimes considerable relief is afforded by using a miotic, thereby contracting the pupil and shutting out the light. Cocaine will give temporary relief but is not near as applicable as butyn, as cocaine dilates the pupil more or less, while butyn has no effect on the pupil, yet its anaesthetic properties are just as good as cocaine.

One of the most aggravated cases I ever had to deal with was a man twenty-seven years old who got a flash of electricity on the left side of his face from a broken wire on a fan. This patient suffered excruciating pain, with extensive hyperemia photophobia and profuse lachrymation, and for a time no local treatment gave him any relief, and it was necessary to give him hypodermics of a quarter of a grain of morphine, which had the two-fold effect of relieving his pain and contracting the pupil.

Glass blowers have a condition very similar to that caused by electrical flashes after they have followed the occupation for several years. The cornea and crystalline lens have the power of absorbing more or less of the ultra violet rays and Dr. J. Hubert Parsons, of the Royal London Ophthalmic Hospital, reports an ex-

*Read before the Section on Eye, Ear, Nose and Throat, Annual Meeting, Oklahoma State Medical Association, Muskogee, May, 1927.

periment which he conducted, one of which was placing a crystalline lens which had freshly been removed from a rabbit's eye on the back of his hand and then exposing it to ultra violet rays until the skin resembled sunburn, and upon removing the lens from the skin of his hand it was found to be white and not burned like the surrounding tissue, which demonstrates the power of the crystalline lens to absorb the bright lights.

Parsons also examined many cases of cataract in bottle makers among workmen who had been exposing their eyes to intense glare over a long period of time. In his report he says that his investigations have proved conclusively that these cases of cataract are characteristic and unlike other forms commonly observed and have a typical form very dense, well defined disc of opacity in the center of the posterior cortex, and not infrequently slighter hazy opacities are seen around the posterior corneal discs.

In cases where the electric flash has been strong enough to affect the retina we get a general retinitis and the macula appears yellow when examined with a red free light. These patients are troubled with a red vision similar to those who have been operated on for cataract, which is attributed to the action of the ultra violet rays, but this can be relieved by wearing heavily tinted glasses such as a Crookes B. The prognosis of these cases is usually very favorable and does not result in any impairment of vision, save in very severe cases where chemical changes have taken place in the cornea or a cataract has developed.

One patient whom I treated for an electric ophthalmia proved to be one of the smoothest malingerers that I ever came in contact with, but like all of these he finally slipped, and he would not ever admit that he could see out of the eye after I had had him reading twenty-thirtieths which he supposed he was doing with his other eye. The treatment in these cases is similar to other forms of ophthalmia; antiseptics such as boric acid, argyrol, cold compresses, a darkened room, and something to relieve pain, and I have found that a combination of butyn and picric acid which is put up in the form of an ointment, is ideal, as the butyn relieves the pain and the picric acid is very healing.

REFRACTION—OCULIST OR OPTICIAN*

L. A. NEWTON, M.D.,
OKLAHOMA CITY

Most of the laity do not know the difference between an oculist and an optician and it is a lamented fact that many of our physicians are indifferent as to who does their refractive work, not only their patients', but their own personal work.

Within the last ten years the wholesale optical companies, as well as the ambitious opticians, have been trying and nearly succeeded in putting refractive work on a commercial basis instead of one of real service to the public. With most of them it is a practice of selling every person possible a pair of glasses, and numerous ingenious methods of advertising to attract the public's attention to their eyes—for the sole purpose of selling a pair of glasses has been used, the same as the merchants advertise their various wares. And the man who is the smoothest talker and the best salesman becomes the most successful man in this line. It is alright to advertise merchandise, real estate or various articles of commerce but when it comes to rank advertising on matters regarding public health, it should be classified along with patent medicine. A few years ago the opticians were so ambitious they were about to try to get a law enacted whereby a physician would have to pass their state board of examiners before he would be permitted to prescribe glasses and then I suppose the chiropractors would have made us pass their state board before we could look at a spinal column.

The wholesale optical companies have numerous so-called "high pressure salesmen" on the road selling fancy, high-priced optical equipment, some of which may be of value to one in refractive work but has nothing over our older equipment. These salesmen try to lead you to believe that unless you buy the fancy, high-priced equipment you are out of date and will be counted a poor refractionist and a back number. Practically all of the optical parlors are equipped with this fancy equipment and it is for nothing more than a show and to impress upon the laity

*Read before the Section on Eye, Ear, Nose and Throat, Annual Meeting, Oklahoma State Medical Association, Muskogee, May, 1927.

their superior qualities as refractionists. The commercial end of this work has gone on to such an extent until many of the department stores now-a-days have installed an optical department where glasses are fitted the same as buying a dress or hat. Several of the larger cities now have a chain of optical parlors similar to cigar stores or established on every prominent thoroughfare, with all of the latest fads and fancies in frames and fancy nose glasses on display in their show windows to attract attention of the passers-by. Many people seeing these displays in windows do not know or in any way connect up a physician with glass fitting. It is a common thing to have a patient come to us for treatments of various ailments of the eye and about the time they recover mention the fact they think they are going to have to have glasses and are rather surprised when you tell them you fit glasses yourself.

It is conceded that where there is no special pathology of the eyes an optician may be able to refract presbyopias practically as well as an oculist, but the advantage of an oculist is he is able to interpret pathology and is always on the outlook for such. Every fundus should be carefully examined with the ophthalmoscope, careful inspection of the lids, conjunctiva, lachrymal apparatus, cornea and crystalline lens as well as the muscular balance. We all know that it is a very common thing for us to find cases where there is something about the eyes that leads us to make a diagnosis of some more serious constitutional condition, such as diabetes, nephritis and high blood pressure or various focal infections throughout the system. These are things which the optician never looks for and even if he did his knowledge of anatomy and pathology would not be sufficient that he would be able to recognize or interpret them. Therefore, it is better for patients to be examined by an oculist for his general health's sake even were the opticians equally as capable refractionists.

We cannot too strongly condemn the practice of fitting glasses to school children and young adults without the use of a cycloplegic as it is practically impossible to find all of the errors of refraction in any other manner. Many of the opticians advertise and are attempting to straighten cross eyes with glasses. It is indeed a deplorable condition, for if these children are gotten hold of early enough in life and

a thorough refraction done and the cooperation of parents is obtained, many of these youngsters can be markedly benefitted not only by the correction of the squint but by putting the eye into active use and prevent it from becoming amblyoptic or practically a blind eye. The optician has taken unfair advantage by telling people that drops will ruin their eyes. Many of them tell people that the oculists fit the eyes to the glasses rather than the glasses to his eyes. Many patients come to us who absolutely refuse the use of a cycloplegic for no other reason than the fact that this false fear has been inculcated into their minds. Of course it is a little inconvenient to have one's pupils dilated and be unable to read or use their eyes for twenty-four hours. This is especially true with people who do clerical work. It is often inconvenient for them to lose the time from work but the most of these patients can be shown where it is to their advantage to have the refraction done properly and that they will receive much better service from their glasses fitted in this way, and they will not have to be running back every month or two to have their lenses changed. This changing frequently is a part of the commercial end of the work rather than one of service as it is a sort of endless chain proposition to keep business good. Many of these patients refracted without drops are benefitted, or think they are benefitted, temporarily when they are refracted in that way as most any lens placed in front of their eyes changes the muscular strain, but it is only a question of time until the strain shows up as bad as ever. Then a new pair of lenses helps again for a time and possibly eventually a good correction is obtained if he is smooth enough to keep them coming back. Most opticians keep out of deep water by fitting spherical corrections rather than cylinders for they are more readily tolerated by the eyes. This is especially true in the lower astigmatic errors. Where the correction comes in cylinders as high as one diopter it is not so hard to find the error, but these patients usually complain of poor vision rather than the annoying symptoms of headaches, etc., associated with the lower grades of error. The indications for refraction are usually well marked symptoms but the larger per cent of our patients now days come to us with their own diagnosis made. We of course cannot always accept their own interpretation of symptoms. Headaches coming

on at certain times and under certain conditions is one of the most pronounced and constant symptoms. Here the most careful discrimination must be made regarding the type and time of headaches. Many patients reaching middle life and beyond come to us with headache symptoms which they think is due to eye strain. But headaches coming from eye strain is a rare condition after forty-five to fifty years of age. Here again the oculist is much more able to render service to his patient than the optician, because he is likely to go into details and find the patient is suffering from some constitutional condition such as high blood pressure, diabetes or nephritis. Many physicians who are not careful in their diagnosis will refer this class of patients to an oculist for a refraction to relieve their headaches and are chagrined or provoked when you refer them back for a more thorough physical examination. Another class of patients who come to you for refraction are those who complain of headaches on arising in the morning, but this condition is rarely due to eye strain and as a rule if these patients are refracted with the promise of relief only disappointment can be expected and a disgusted patient as well.

Practically all our schools now days have periodic health inspections, and the eyes, teeth and tonsils are included at such examinations and in this way numerous cases of defective vision and eye strain as well as diseases are picked up. But in my experience I have not given glasses to more than ten per cent of these children who are sent in for correction. In my opinion it is practically useless to put a correction on these children under twelve years of age unless the error is quite a high one as most children will run at play and have their glasses twisted or bent and setting improperly in front of their eyes. When this is the case the glasses are worse than useless to them. We have all observed many children whom we have seen wearing glasses for a short time and then discard them entirely. We, as oculists, should not look upon these cases from a mercenary point of view but from a service point of view. The trend of the modern optician is to sell, if possible, every one who comes into their place of business a pair of glasses and unless they are able to do so they are counted poor salesmen. It is good business to render honest, efficient service rather than good business to see how many

glasses we can sell if we want to look at it from a business point of view.

One of the very important things in fitting glasses is the placing of them properly in front of their eyes. Many men are capable refractionists but are poor frame fitters. A correction may be ever so good or absolutely accurate and placed improperly in front of the eyes and be practically useless to the patient. This is especially true of bifocal lense. One cannot expect the patient to be satisfied with a pair of bifocal lens that rests down on their cheeks putting the reading segment so low that in order to see through it they must pull hard on the external ocular muscles. These patients will almost invariably come back to you complaining about their glasses. It is a good rule to set the glasses well forward and have the segment come as high as possible not to interfere materially with the distance vision. It is very important that we get an accurate pupillary distance along with a good solid substantial frame that will hold the glasses properly in front of the eyes. It is good practice to have the glasses brought back to your office and delivered to the patient personally where they are inspected and see to it that they set properly in front of the patient's eyes and explain to them the importance of keeping the glasses setting properly. These little personal details go a long way toward your success as a refractionist.

Recently, I saw a patient who has been refracted by a competent oculist in the east who had had the wholesale optician deliver the glasses to her on prescription. The correction was good but the pupillary distance was off at least 10 m.m. and the position of the lenses was very poor. This patient was bitterly condemning the oculist who had fitted her when in reality it was the fault of both, he and the wholesale optician. The properly placing of the glasses in front of her eyes gave complete relief.

To be a good refractionist requires good judgment the same as it does any where else in the practice of medicine. It is remarkable what an influence a good talker can have over a patient in making them wear glasses and telling them they would soon have been blind had they not sought out their assistance when they did. When as a matter of fact blindness from lack of wearing glasses is an unknown thing. One should give every patient a very careful refraction and feel sure they are right and then the patient should be assured the

glasses are correct; this will save many comebacks and make many more pleased patients. But if you let a patient get out of your office where they feel you have a doubt about their correction being right they almost invariably will come back complaining or seek relief elsewhere. There are certain nervous types of patients whom it is almost impossible to satisfy, it is not uncommon to have patients come to your office with three or four pairs of glasses, any one of which they should wear with comparative comfort. It is best to not sell these patients a new pair of glasses but assure them they should wear what they have, for you are only borrowing trouble nine times out of ten if you give them a new correction. There is one class of patients whom it is almost impossible to get to wear glasses when they really need them, and that is those with a myopic astigmatic error of from one to three diopters where they have reached thirty-five to fifty years of age and have never worn a correction. They really have never known what good vision is and have become so settled in their ways they cannot get accustomed to glasses and the new vision and glasses make them nervous even when their vision is materially improved or brought up to normal with a correction. This same class of patients are very hard to deal with at the presbyopic age. Where there is an astigmatic error of myopia of one diopter a plus cylinder of the same strength at the opposite axis gives them a reading correction at forty-five to fifty-years of age, but these patients can go four or five years longer without a reading correction than a person with an emmetropic eye as half the rays of light focus on the macula and they are able to make out with it and for some reason or other they become nervous and are hard to get themselves adjusted to a correction when given one.

We should not be too prone to blame the patient with being nervous or a crank when they come back complaining about their glasses as in a large majority of cases there is a little something wrong about their correction or fitting of the frame and it is our fault many times and not the patient's. If we will take the time and patience to work it out we can generally find it. Every patient should have it explained to them that at first the glasses may give them some annoyance, especially those fitted under a cycloplegic where there is considerable latent hyper-

opia as the ciliary muscle does not always want to accept the correction and blurring results for a time but will soon be overcome if glasses are worn constantly. It is a good rule to make considerable allowance for accommodation when correcting simple hyperopia as the eye can overcome considerable of it with no ill effects.

Persons who put on their first pair of bifocal lens also should have careful instructions about how to wear and what to expect of them as they give many people considerable annoyance at first, especially those inclined to be fidgety or fussy and a little care and personal attention to this will save you many annoyances.

Our best methods of refraction are still our old time trial frame retinoscope, ophthalmoscope and ophthalmometer all used in combination with each other. One should weigh the results of what they find with each instrument then use their judgment as to what correction to prescribe. Some men claim to be expert enough with the ophthalmoscope to be able to refract with it alone, but this certainly is far fetched and is very likely to give poor results in a number of cases, unless they were indeed an expert and that expertness is such a hard thing to acquire that few are able to get it.

The ophthalmometer is a great help in many cases to help locate the axis of a cylinder as well as its help in finding their strength. These cases where there has been an interstitial keratitis early in life and left an irregular cornea, as well as old trachoma cases or scars from corneal ulcers, and ophthalmometer will show these irregularities up nicely and save you much work when you have been unable to see with the ophthalmoscope or loupe why your patient does not see more clearly with the lenses you have been trying on them. It also enables you to tell your patient definitely you cannot improve their vision any further and why, without fear that you are overlooking something or that the patient is amblyopic either toxic or congenital. In many of these cases to all outward appearances the cornea is perfectly normal but the ophthalmometer will show the irregularities.

Discussion: DR. H. COULTER TODD, OKLAHOMA CITY.

I have read Dr. Newton's paper and I think it is excellent and to the point. I regret, however, that he did not stress retinoscopy more in his discussion.

In practically all cases where a mydriatic can be used, skillful retinoscopy makes refraction almost an exact science. It is an objective test which eliminates the patient's judgment in the matter and is based upon scientific principles in optics. By practice and patience every oculist should acquire such skill with this simple little instrument that will enable him to positively and accurately work out the refraction of any meridian of the eye without any direct assistance on the part of the patient.

In my opinion the skillful use of the retinoscope will do more to take the oculist out of the opticians' class, so far as the refraction is concerned than any other thing, simply because it will enable the oculist to render his patient perfect results.

EXTERNAL OTITIS—A COMPLICATION*

A. M. McMAHAN, B.S., M.D.,
DUNCAN

We have all had cases of external otitis of some form which have given us plenty of trouble. After treating them several days maybe we have noticed small watery vesicles begin to appear about the orifice of the external canal and rapidly spread over the pinna, out in front of the ear, below the ear, or back over the mastoid region and into the edge of the hair. Or maybe we have been disappointed to see this phenomenon occur about the time we thought we were whipping out the external otitis and had it well in hand. Sometimes we have seen it following removal of a polypoid or fibrous tumor from the ear. But in all these cases we undoubtedly have the chronic external otitis existing to begin with. This fine vesicular eruption is the complication I want to discuss. Is it a complication or is it a disease in itself? It might be considered a symptom, a part of, or a complication of external otitis, or a disease in itself. However, I believe it is simply one of the complications of external otitis and will be treated as such here. In this connection I will say that eczema will be here considered one form of external otitis. The treatment of this condition as usually carried out is so unsatisfactory that the complication is well worthy of our consideration.

And any physician who has had this complication arise in his practice with any degree of frequency and has not had a patient, secretly or otherwise, consider trying another doctor is undoubtedly a wonder. The annoyance of the itching and oozing of these areas is great.

I will reverse the usual order and give a few cases as illustrative of this condition: Mrs. S. came to my office on October 19, 1925, complaining that she could not hear out of one ear, which condition had been getting worse for about a year and a half. She stated that the ear had been sore at times, but had never discharged, bled or pained her. She could pull the pinna back and hear very well. On examination I found a hard fibrous or cartilaginous tumor blocking the canal. Under local anesthesia I removed the tumor and found the drum looking fairly well, but the canal back of the tumor was rather raw and there was some thick pus present. I treated the canal gently a few days until it was looking fairly well. About six weeks later she returned and stated that the ear had been itching fiercely. I examined the ear and found the vesicles appearing from the canal and spreading over the pinna. I treated them by cleaning out the ear and using 10 per cent ichthyol in glycerin, and giving her some zinc oxide ointment for home use. I had her return two days later and found the eruption spreading rapidly over the pinna and making for the hair back of the mastoid region. It was still spreading and oozing and leaving the encrustation behind the last time I saw her. The condition cleared up suddenly, according to the husband, and she did not return again. This is a habit that this complication has. That is, when things are looking bluest it will suddenly "about face" and heal rapidly without any reason that I can figure out. At other times it is not nearly so obliging. Now, I believe that in this case the patient had had for a long time this external otitis as was evidenced by the rawness of the canal back of the tumor and the pus which was prevented from escaping by the tumor. Later, when conditions such as temperature, bodily resistance, diet and humidity of the atmosphere were just right, the external otitis flared up and this "pesky" vesiculation followed.

A second case, Mrs. H., about thirty years of age, came to my office complaining of itching of the external auditory canals and a peculiar sensation, when riding in the car, of continuing to go forward

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after the car had stopped. I found on examination a dry, scaly condition of the canals with quite a bit of epithelial detritus. Hearing was good. I proceeded to treat the eczema with the ointments commonly recommended. Everything went well and in due time the ears looked well. I told her to return in one week. About the next day after I last treated her the itching, eruption and oozing started, but she waited until the stipulated week was up before she returned. I found the vesicles spreading over the lobule and forward onto the face. I had been pondering the subject of treatment and applied a different line of treatment this time and got a rather quick response. Now, if you will pardon my digression, I want to say that the sensation of falling forward that the lady complained of disappeared soon after we began treatment of the ears. As to why it should disappear when we were treating only the external canals, and as to what was causing it I have my own ideas. We know that the falling sensation is most usually due to either internal ear trouble or some involvement of the cerebellum. In this case the hearing of the internal ear mechanism was apparently normal. We know that in treating the ear rubbing or pressing on the external canal wall at a certain point coughing results. This phenomenon is explained by the fact that certain nerve endings at this point are irritated, and the stimulation is carried to the cerebellum and in turn is relayed to the larynx resulting in the cough. Now, if this could take place why could not the irritation of the canal by the eczema affect the same nerve endings and be transmitted to the cerebellum and result in the disturbance of equilibrium since the cerebellum has to do with equilibrium. I believe it could. Therefore, when we removed the eczematous irritation in the external canals we thereby relieved the falling sensation.

A third case is that of Mr. P., a Greek lunch stand proprietor, who came to me because of intense itching in the external canals. On examination the canals showed to be nearly blocked by dry epithelial scales. Two or three days' treatment was only slightly beneficial. Then oozing in the canals began and the itching became exasperating. The vesicles began rapidly spreading over the pinna and to the surrounding parts. The usual ointments seemed to have no effect at all. A day or two later the condition began suddenly to

subside, but not until he had paid a visit to a general practitioner. Undoubtedly the general man had some wonderful medicine. This was a case of dry eczema which had been badly neglected.

As stated before, I believe there are many cases of external otitis which are not eczema. I believe also that this spreading of vesicular inflammation may come from any type of external otitis whether it is eczema, "tank ear," furuncle, tumor or simple external otitis from any cause. The most important phase of the subject in my estimation, is the treatment. I believe that the usually prescribed treatment is not what it should be. At least it has proven very unsatisfactory in my hands. Ichthyol, zinc oxide, or yellow oxide ointments seem to be the first thought with most of our text books. Personally, I have come to believe that any form of ointment is detrimental. Why it is detrimental, I don't know unless it interferes with the escape of the oozing fluid and proper aeration of the skin. Water and soap together or separately are to be avoided. During the last year or two I have been using alcohol either straight or containing about two per cent each of resorcin and salicylic acid and one per cent of carbolic acid. This usually burns intensely, but for only a minute. I can see results with this line of treatment immediately and lastingly. If anyone present has a better remedy I hope he will divulge the secret. Also, if any one disagrees with anything here stated, let him shoot for I am anxious to become more adept at handling this condition. I have hoped to arouse some vigorous dissension with this paper for the purpose of learning something myself. But until someone puts me wise to a more effective application than the alcohol preparation I shall continue to use it as being the most effective agent that I have thus far uprooted.

"THE IMPORTANCE OF VISUAL FIELD STUDIES IN SYMPATHETIC OPHTHALMIA"*

ALONZO C. MCFARLING, M.D.
SHAWNEE

In order to emphasize the importance of charting the visual fields as a diagnostic means in all cases of sympathetic oph-

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thymia to which it is applicable, and to facilitate description, I shall divide all cases into two classes; first, sympathetic inflammation and sympathetic irritation. This classification has been recognized by ophthalmologists throughout the ages, yet there may be some difference of opinion as to the finer points of distinction between the two, but for the purposes of this paper I shall consider the first classifications as embracing those cases in which the symptoms are well marked and are both objective and subjective. Reviewing the literature on the subject the symptomology of this type may be briefly summarized in the words of Arganaraz, who states that chronic inflammatory processes of the iris and ciliary body, following the penetrating wounds and the entrance of foreign bodies are most likely to cause sympathetic ophthalmia. Plastic and serous iridocyclitis are the most frequent forms of sympathetic ophthalmia. In the plastic form the pain, photophobia, and lacrimation are more intense, the perikeratic injection more pronounced, and the posterior synechias are abundant, leading to occlusion and seclusion of the pupil, the iris is discolored and the pigment of the iris is ectropionized. The crystalline lense produces an inflammatory exudate which later coagulates; the vitreous exudates become organized into connective tissue, detaching the retina and causing atrophy of the eyeball. Vision is completely lost.

To recapitulate, according to D. T. Vail the following clinical triad of objective findings is considered necessary to establish an undoubted diagnosis: (1) Penetrating injury of one eyeball followed by a lack of healing response, which is manifested by a quiet iritis and a disposition to wandering or detaching pigment cells from the uveal pigment of the iris, along with the formation of profound posterior synechia and absence of severe pain in the injured eye. (2) The presence of systemic anemia characterized by pallor and adynamia. (3) The appearance in the fellow eye of the following: (a) a quiet iritis rapidly forming circular synechia; (b) plastic optic neuritis and retinitis and (c) minus tension as demonstrated by the tonometer.

The diagnosis of such cases is usually not difficult, the intensity of the symptoms obviating the necessity for, if not entirely precluding the possibility of charting the fields of vision.

Passing to consideration of the second classification or the so-called sympathetic irritation, we find that to make a diagnosis is no easy task, for there is nothing in the appearance of the second eye in sympathetic irritation that is absolutely diagnostic, yet certain findings occur with great frequency. According to Fox the onset of this condition is marked by such prodromes of photophobia, asthenopia, lacrimation, contraction and clouding of the visual fields, various color sensations, blepharospasm, photopsia, and amblyopia. Pericorneal and ciliary injection, pain and tenderness in the ciliary region and neuralgia along the course of the fifth nerve are also present. These symptoms as constituting sympathetic irritation are attended by no structural changes. Fuchs says "that such symptoms are to be called by the name of the sympathetic irritation, only when objective signs of inflammation are absent, for when these occur it is a question not of sympathetic irritation, but of sympathetic inflammation. A characteristic sign, furthermore, of sympathetic irritation is that it disappears at once and forever, when the primarily affected eye is removed."

Since all are agreed that sympathetic inflammation is practically incurable and that sympathetic irritation, if permitted to go untreated, will in time, by the increasing severity of its symptoms merge into sympathetic inflammation; it naturally follows that we should employ every available means for diagnosing this condition while it is in the curable stage. Time being an important factor, in the transition from the stage of sympathetic irritation to that of inflammation, we may also consider the time-interval following the injury. Most cases occur in from four to eight weeks, following injury. It is generally conceded that an injured eye that has been free from inflammation for several months or a year is not apt to cause sympathetic inflammation in the other eye, yet many cases have been recorded in which years elapsed before the disease made its appearance. It must be remembered that an active inflammatory process may exist in the deeper part of the uvea with no external evidence of the disease.

Illustrating this point, as well as calling attention to the importance of charting the visual field in this particular type of cases, the following case history is appended.

CASE HISTORY

Mrs. M.—patient, age 28, was admitted to the hospital on July 8th, with the following history briefly stated:

Family history—Negative.

History of present illness—patient noticed some dimness of vision since February, 1926. There was no pain, redness, or swelling of the eye, and the first thing noticed was a subjective sense of failing vision experienced for distance and near work.

Past History—Patient has had measles and whooping cough during early childhood, but no other illness since that time. Had an injury of left eye at three years of age, which was incurred while playing with a pair of scissors. All coats of the eye were perforated, vision was entirely destroyed.

Examination—Inspection revealed right eye of apparently normal proportions with visual acuity 20-20 Snelling type. There was Normal intra-ocular tension. Media clear and fundus apparently normal. Left eye a shrunken mass of scar tissue about half the size of a normal globe. No pain, tenderness, redness or swelling. Since the patient came asking to be fitted for glasses an examination of the refractive condition of right eye disclosed that no glasses were indicated. A charting of the visual field was done at this time, which revealed a large relative scotoma in the upper right quadrant of the central field as well as the entire peripheral field.

Treatment—The shrunken remains of left eye were enucleated on July 8th.

Results—July 15th patient reported at office for examination, at which time vision of right eye was 20-20 and color field very much improved. Patient had also noted improvement in visual acuity before examination. July 20th visual field was again charted and found normal for all colors throughout both central and peripheral fields, and post-operative condition had so improved at this time that an artificial eye was fitted and patient dismissed.

Had the visual field not been charted in this case, it would in all probability have gone unrecognized until the objective signs of sympathetic inflammation made their appearance which would have been too late to save the vision by removal of the offending eye.

Searching carefully the literature at hand for data concerning changes in vis-

ual field in this particular type of cases and finding nothing beyond the bare statement that contractions and clouding of the fields were to be expected, I was led to ask a prominent Research Bureau for assistance in the search, and was informed that after a careful search nothing could be found on this phase of the subject. Just why this valuable means of diagnosis is so neglected I am unable to determine, but in view of the colossal advances that have been made in all modern medical sciences, and since the instrument makers have bestirred themselves to improve the instruments whereby the readings in field studies may be more conveniently and accurately made, our failure to make a more routine use of field studies in our diagnostic efforts is a sad commentary on our negligence as ophthalmologists.

In closing I must say that if the interest of my hearers has been rekindled even in the smallest measure in visual field studies the purpose will have been served for which this paper was intended.

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SARCOMA OF THE CHOROID*

J. FRANKLIN GORRELL, M.D.,
TULSA

THREE CASE REPORTS

Gentlemen, I am sorry I do not have a new message to bring to you, simply a report on these cases clinically and pathologically. The three cases which I will report were seen by Dr. Roth and myself between November, 1923 and September, 1925; and if I am not mistaken Dr. Roth read a report on one of these cases before this section.

Sarcoma of the Choroid, according to "Ball," is found in one to three thousand ophthalmic patients and is usually a primary growth, but a number of cases have been reported by de Schweinitz, Meigs and others where they found it secondary to growths in the mediastinum, liver and so forth. The three cases I will report later were primary and unilateral. It is a disease we usually see after 45 years of age but two of these cases, as you will note, were before the age of 25 years and both patients were in the best of health. It is a disease said in text books to be more common in the males than females and since two of the three cases were males I will have to agree with the text books.

Since sarcoma is transmitted through the blood stream the choroid of the eye is a very fertile field for it to develop and is usually described under four stages.

First—The first stage at the site of the tumor will be noticed a detachment of the retina which will vary according to the size of the tumor and the exudate. At this time there is no pain and if the tumor and detachment is not near the macula the patient may not be conscious of the fact a tumor is present. The duration of this state is one to two years.

Second—In the second stage we have the beginning of glaucoma, increased tension, shallow anterior chamber, dilated pupil, opacities and often cloudiness of the cornea and media, often in this stage develops the absolute glaucoma. If so, it is a problem for the oculist to decide whether he is dealing with a simple glaucoma condition or with a tumor and a secondary glaucoma.

Third—The tumor breaks through the eye and symptoms vary according to the location of the exit. It is at this time the tumor makes its most rapid growth, pain is usually relieved for a time due to the escape of the fluid, thereby reducing the tension and glaucoma. The growth is very vascular and bleeds easily.

Fourth—The fourth stage is the metastatic stage and may locate any place in the body. Liver, spleen and mesenteric glands are the favorite locations. According to Ball, the first and second stages may occupy several years but the third and fourth stages are measured by months.

In making your diagnosis of sarcoma of the choroid you will have to differentiate between detachment of the retina, carcinoma of the choroid, glaucoma, syphilis with exudation, glioma and tubercle of the choroid.

Differential—In detachment of the retina, you generally have the history of trouble appearing suddenly, examination usually shows vitreous opacities, loss of tension and choroiditis. Transillumination negative, and the tumor mass will usually show folds, and will often undulate on movement. Tension is a valuable diagnostic sign as it is generally reduced in simple detachment while if the tumor is present it will often show an increase.

Carcinoma of the choroid is usually a flat tumor mass and is generally secondary to carcinoma of other parts of the body. It does not project itself into the vitreous tumor like the sarcoma, neither do you see the new blood vessels crossing the mass as in sarcoma, and it is likely to affect both eyes.

Glaucoma, the differential diagnosis, is most difficult. It is often very hard to differentiate between the two, especially of acute inflammatory glaucoma. Transillumination is one of the best methods. When a student in New York, I witnessed one of the best surgeons make such a mistake. Dr. Ball also reports a case where he did an iridectomy, later to find he was dealing with a sarcoma instead of acute glaucoma.

In syphilis with exudation, you have your history. Wassermann, spinal fluid and treatment to help you differentiate, if no improvement under careful treatment and observation you can be reasonably sure you have a more serious condition to combat, and probably you have a

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tumor back to your exudate. In glioma, you have the age of the patient. This condition is usually seen in early childhood, also the coloring of the tumor is markedly different.

Solitary tubercle of the choroid, may be confused with sarcoma, but usually can be differentiated by the history, tuberculin tests and the tumor does not show the blood vessels like it does in sarcoma. Usually by close examinations other tubercles may be found.

Pathology—It is usually a firm tumor, but may undergo degeneration. Histologically it consists either of round or spindle cells or both and the cells often contain melanin giving it the dark appearance. It generally develops from the outer or middle layer of the choroid and grows inward toward the vitreous. Seldom does this tumor involve the brain tissues. The prognosis in a tumor of this type is always grave but if operated upon during the first two stages and radium used I believe we can give a fair prognosis. Of course, we should always warn our patients of the possibility of metastasis and the advisability of returning for future examinations.

Treatment—Early enucleation, if the tumor has passed the second stage, complete removal of orbital contents must be effected. Followed by radium or X-Ray therapy.

Case 1—History of LeRoy Mc. Age 14 years. White. November 20, 1923.

Chief complaint—Loss of vision of right eye.

Family history—Father and mother and three sisters living and well.

Previous history—Had childhood diseases, measles, whooping cough and chicken pox. No bad results.

Present illness—About one year ago noticed blurring of vision of the right eye, growing progressively worse until July when, during a boxing match following a blow on the right eye, vision was completely destroyed but did not consult a physician. In October he began to have occasional shooting pains.

Physical examination—Well developed boy, apparently perfect health except pupil right eye dilated and a yellowish membrane presenting back of the iris could be seen with the inflammation. With ophthalmoscope an inflamed mass about four m.m. in diameter, nasal side, could be

seen. Wassermann negative. Transillumination, negative.

Diagnosis—Detachment of retina and tumor of eye. Immediate operation urged but not until December 26th, was the eye removed. Frequent examinations showed color of tumor changing, darker in color.

Laboratory report—Eye ball showing tumor mass posterior chamber. Microscopic: A very cellular growth, apparently rising from choroid, and showing many cells loaded melanotic pigment throughout the mass. Diagnosis: A small spindle cell melano-sarcoma of the choroid: Radium treatment of the socket, no complications to date and socket seems perfectly healthy: Boy in high school.

Case 2—Mrs. W. A. F. White. Age, 23. March 31, 1925.

Chief complaint—Pain in left eye.

Family history—Father and mother living and well. No brothers or sisters.

Previous history—Childhood diseases, measles, whooping cough. Otherwise always healthy. Married at 19, one child two years old.

Previous illness—About two years ago suddenly lost sight in left eye. A few days later developed severe pain in eye. Consulted oculist who diagnosed her condition of glaucoma and advised enucleation. Immediately consulted another physician who treated eye for one month. About one year later consulted oculist who advised her to let eye alone and take X-Ray treatments.

Physical examination—Well developed, apparently perfect health, except left eye markedly inflamed, tension markedly increased and unable to see back of lens. Advised operation and Dr. Roth operated. Wassermann, negative.

Laboratory report—Dark brown tumor mass involving three fourths of the eye ball. Microscopic: Sections show mass spindle cells held together with fine fibrous network and containing many blood spaces and a large amount of melanic pigments. Diagnosis: Melanoma. This patient was also treated by radium after enucleation. They have left the city so have been unable to get any further report.

Case 3—Mr. F. R. F. Age, 58. Male. White. March 24, 1924.

Chief complaint—Loss of vision.

Family history—Negative.

Previous history—Had childhood diseases, otherwise always in good health

Present illness—Struck in right eye by nail December 1st, 1923, the eye at that time was inflamed for several days but cleared up. Was treated by local physician.

Physical examination—Very well developed man, apparently in best of health. Examination of right eye, no inflammation of conjunctiva, tension slightly increased, pain, none, cornea clear, slight reaction of iris to light, vitreous clear. Only a small portion of lower border of fundus visible with ophthalmoscope. About two thirds of pupil covered with dark mass descending from above. Transillumination shows dark mass.

Diagnosis—Tumor right eye.

Operations—May 27, 1924; enucleation right eye and specimen sent to laboratory.

Laboratory report—Gross appearance: A small round, almost black tumor measuring 1 c.m. in diameter. Occupies the upper and anterior part of eye ball, very firm in consistence. Microscopic sections: It is composed of spindle cells in long strands of cells. These strands cross the field of vision at all angles, the whole being woven into a solid tumor mass. Some strands sectioned at right angles show rounded nuclei. Others sectioned along their length show long spindle cells with elongated nuclei. The melanin is in an extremely finely divided state and is to be seen practically throughout the tumor mass. There are a few clumps here and there. It is both extra cellular and intracellular.

Diagnosis—Melanoma, which takes the form of sarcoma of the spindle cell types.

This patient was also treated by radium after the operation. Am very sorry, on account of these patients leaving this section of the country, that I have been unable to follow up our results. I examined the 14-year-old boy on February 15, 1927, and find his socket is in a healthy condition. Boy developing rapidly and in the best of health.

References—Ball, de Schweinitz and Roemer.

BOOK REVIEWS

TEXTBOOK OF BACTERIOLOGY. By William W. Ford, M.D., Professor of Bacteriology, School of Hygiene and Public Health; Lecturer on Hygiene, School of Medicine, Johns Hopkins University. Octavo of 1069 pages with 186 illustrations. Philadelphia and London: W. B. Saunders Company, 1927. Cloth, \$8.50 net.

This is a very thorough work, when one considers the countless thousands of monographs, contentions and opinions prevailing as to various phases of bacteriological activity. The writer, who thoroughly appreciates the difficulty of reconciling so many varieties of bacteriological opinion, has most assuredly presented a very thorough work. The descriptions, actual and differential, of the types of bacteria considered are set out in more completeness than has been before observed by the writer. It should be a very helpful and practical aid to the student and practitioner.

INTERNATIONAL CLINICS. Volume Two, Thirty-seventh series, June 1927. Edited by Henry W. Cattel, A.M., M.D., Philadelphia, with the collaboration of many eminent American and European authorities. Illustrated, 308 pages. Cloth, 1927. J. B. Lippincott Company, Philadelphia.

Diagnosis and Treatment, Medicine, Surgery, Public Health, Medical History, Travel Clinics, Postgraduate Study, and various miscellaneous matter, including an address delivered to the American Medical Association by President Coolidge at the Washington meeting, are features of this volume.

AMERICAN ILLUSTRATED MEDICAL DICTIONARY. The terms used in Medicine, Surgery, Biology, Dentistry, Pharmacy, Chemistry, Nursing, Veterinary Medicine, and Kindred branches. Edited by W. A. Newman Dorland, Classification of Diseases of American Medical M.D., Member Committee on Nomenclature and Association. Fourteenth Edition, Revised and Enlarged. Octavo of 1388 pages, 319 illustrations, 107 in colors, Philadelphia and London: W. B. Saunders Company, 1927. Flexible binding, Plain, \$7.00 net; Thumb Index, \$7.50 net.

More than one hundred new cuts and more than two thousand new words have been added to this edition. This, is without question, the most satisfactory dictionary in information, arrangement and form, offered the physician. In time of need consultation of its pages brings the necessary information in proper and concise form.

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DR. CLAUDE A. THOMPSON.....Editor-in-Chief
Barnes Building, Muskogee, Okla.

DR. P. P. NESBITT.....Associate Editor:
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Reprints of original articles will be supplied at actual cost, provided request for them is attached to manuscript or made in sufficient time before publication.

Articles sent this Journal for publication and all those read at the annual meetings of the State Association are the sole property of this Journal. The Journal relies on each individual contributor's strict adherence to this well-known rule of medical journalism. In the event an article sent this Journal for publication is published before appearance in the Journal, the manuscript will be returned to the writer.

Failure to receive The Journal should call for immediate notification of the editor, Barnes Building, Muskogee, Oklahoma.

Local news of possible interest to the medical profession, notes on removals, changes in address, birth, deaths and weddings will be gratefully received.

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EDITORIAL

TRAUMATIC SURGERY

Conclusions of a Report by a Committee of the American College of Surgeons.

The committee, appointed in June, 1926, studied 2,105 cases furnished by the various insurance companies represented, as they were cases coming under compensation acts. Questionnaires were sent to well-qualified surgeons representing these companies. The questionnaire sought

information on several phases, as follows: type of surgeons doing such work; tendency of industrial surgeons to retain cases and treat them even if beyond their skill; surgeons' fees in compensation work; the effort insurance carriers are making to secure the highest type of surgery; hospitals and their charges; value or lack of value of physiotherapy; control of surgical versus privilege of injured to select his own physician; traumatic appendicitis; increasing tendency of doctors and claimants to couple to the injury and disability arising through sickness on the theory of "aggravation"; advisability of adopting rules governing the maximum cost of surgical obligation, and the fracture problem. The above is a summary from the Boston Medical and Surgical Journal, March, 1927, and indicates that the problems Oklahomans confront are essentially no different from those plaguing all other sections of the country. The conclusions are:

That ill-qualified surgeons are giving treatment, and that insurance carriers are endeavoring to overcome the handicap. There is a tendency of doctors to continue in the case when they have neither the experience or skill to care for the injured with the highest degree of ability. As a rule, the fee collected in traumatic surgery cases is higher than that received for similar services among the same class of people if cared for as private patients. Insurance companies have neglected, in the past, to provide proper surgical service for injured employees of their assureds. In many instances the selection of the service has been left to the agent of the injured employee, but that insurance carriers are only partly responsible for this, as they are largely forced into the situation by the indifference of the profession. Hospital charges have been considered satisfactory except that, generally speaking, the X-ray fees are excessive. Physiotherapy, as now rendered, is found to be of little value in the majority of cases. The carrier, through the hospital, should have control of the selection of the surgical staff to render treatment, as well as the selection of the hospital. Appendicitis should not be recognized as a condition growing out of injury. A fee schedule seems essential as a guide and should work no hardship because of the fact that it is realized that such a schedule cannot be made mandatory.

"CUTTING DOCTOR BILLS"

This is the title of more than one editorial. Quoting, in part, from widely separated sections:

"Countless thousands who are still paying hospital bills which compare favorably in size to the sum of all European war debts, will no doubt cheer Dr. Jabez North Jackson, Kansas City, Mo., who declares that a crying need of the day is a middle class hospital with middle class prices."

".....the average citizen is loath to have his 'innards' tampered with too freely in the charity wards."

"The answer to this.....lies in the endowed hospital, where the average man can get treatment and still be able to name the day when he will be out of debt."

All of which reminds us of a novel, the rage of the day many years ago, entitled "Keeping Up With Sally." Every averagely well-informed physician, even those in Oklahoma, inadequately supplied with hospitals, knows that any one with or without means, night or day, has the services of the best medical skill and talent available in the particular community in which he may reside. "Keeping Up With Sally" depicted the antics of Sally's many friends, imitators, all with a restricted pocket-book, who attempted to do exactly as the whim of Sally directed her actions.

The state, county and city now undertakes to look after needy cases if they apply. If they are too proud to accept charity, as to the hospital and doctor bills, then they should hold to exactly the same principles with reference to grocery, dry goods, garage, and gasoline bills. Nearly every one of these "too proud to fight," actual and potential indigents, are possessed with an automobile, which every sensible person still recognizes is an expensive, inexcusable, unwarranted luxury, and, they own it simply to "keep up with Sally," and Sally is exactly in the same plight very often. If the husband gets pneumonia, breaks his leg or loses his job, the rule is that he has not laid by a cent for such inevitable rainy day, so, the doctor and the hospital are asked "in the interest of humanity" to render free services or nearly so. Well, we will, and we do that very thing, but regardless of the phillipics of Dr. Jackson and all the "sob-sister" organizations, the latter often on some sort of payroll for their keep and hospital care, we are thoroughly tired of being asked to be the "mark." We offer to meet any man, profession, organization or business on the fifty-fifty basis, that is, we will give free services if the lawyer, un-

dertaker, (we group them advisedly) grocer, baker, store-keeper and all others of similar ilk contribute in equal measure. Oklahoma is now obligated for many thousands in attorneys' fees, "win or lose" to recover merely supposititious matter. Aside from pitifully fixed charges, which no lawyer with self-respect would consider, it is not obligated for a cent to protect, conserve and save human life. Any mediocre, petty criminal charge, calls for a decision by a battery composed, first: of the district or county judge, advised by a county attorney and a full-time paid staff, their orders executed by a full-time sheriff and his deputies, flanked and abetted by all sorts of court-clerks, on full-time, plus fee basis, and finally, when the well-known crook is convicted for commission of his hundredth crime, he still has all the resources of the Constitution as to appeal, able attorneys, etc., at his beck and call. Tonight if a new Jesus of Nazareth should be about to be heralded into the world, he would be lucky, in Oklahoma, if an incompetent, unexamined, unregistered midwife were obtainable to aid his mother in her travail. Not so with the common offender. Under the guise of "Constitutional Rights" any moronic criminal is protected to the last extremity, and the taxpayers pay the bill.

We cannot subscribe to the matter of "endowing" anything upon the theory that such establishment will help the situation. If government will endow all the needs of people in trouble, and it is workable, its benefits evenly distributed—all good and well, but we are tired of listening to continuous suggestion that the doctor should contribute his services at any less rate than the automobile accessory man, union bricklayer or lawyer. As to "having one's innards tampered with in charity wards," it has been recognized for years that the charity ward patient, as a rule, obtains the very highest class of professional service in the community, and, we know, as a rule, he is extremely fortunatae on admittance to such wards. But, if Mr. average citizen does not feel like accepting charity, on the contrary wants the highest skill obtainable to handle his case, then he should either expect to pay for it or be taught to realize that all things of value have their price. As a matter of fact, if some super-Croesus should endow a hospital, open to all people, without the slightest charge, the "keeping up with the Sallies" would not think of entering it for free

treatment. To be sure, they will walk out without paying either hospital or doctor, but that is their "personal" affair. They would also agree to any sort of reduction fee, provided it did not come under the guise of "free" or nearly so treatment. All this reminds us of the sage conclusion of the late ex-President, Thos. R. Marshall—"What the United States really needs is a good five-cent cigar." Shades of Thomas! Who would smoke it if the public knew it was only five cents?

ARE OUR SCIENTIFIC SECTIONS FUNCTIONING

Contemplation and study of the various scientific sections, as they have functioned for the last few years, has recently been stimulated by the statement of a chairman elected to head a certain section, who, in his daily work has nothing in common with the problems of that section, but is divorced in entirety, by reason of other most pressing problems, from those of the section to which he was elected. As matter of fact, it seems a few idle and friendly admirers "ganged" into a section with which they had little or no interest, and when election time came, elected an unwilling chairman to head a section in which he had almost no interest. This is not the first time this has occurred. The most important section the Oklahoma State Medical Association has ever had—General Medicine, Neurology, Pathology and Bacteriology—certainly the most potent and active quartan to be met and understood by any student of medicine—selected a man who had been, and then sailed under the guise of (S) which means surgery.

We have nothing to suggest in such miscarriage of intent, except this: The House of Delegates is a restive and easily irritable body. These Sections were created only upon, and after opportuning by those intensely interested in the subjects supposed to be covered by the section in question, and if the House decides that its creation is being made into a mockery of inattention and uselessness, then the House, in its wisdom, will rearrange its executives and creatures so that Oklahoma Medicine will function as it should.

Our last meeting heard not a single paper on pathology or bacteriology. These most highly important subjects simply did not exist. This situation is all very well if there is nothing to offer, but every

student and observer well understands that they can neither be ignored or neglected. The remedy lies in selecting chairmen who are vitally interested in the prime objects of the section in question. Merely electing chairmen in the excitement of the moment, in hysteria, as it were, will certainly doom such neglectful section to annihilation by the House of Delegates, for, a very respectable number of attendants upon annual sessions, have for years been insisting that our annual sessions were too highly specialized to fit the needs of the membership, and that our sections should be sharply reduced to not more than two or three in number—that is, General Medicine, Surgery, Eye, Ear, Nose and Throat, with all their attendant necessities, and that in addition to these there should be held more general or joint meetings at which subjects of very diversified, but practical interest should be the order of the meeting.

Probably a very practical solution of the matter would be that the House of Delegates or a specially created scientific body be empowered to name chairmen and secretaries of sections. Such body would have time for more mature deliberation and certainly would not be rushed off their feet merely to recognize the hysteria or foolishness of the moment.

Editorial Notes — Personal and General

DR. C. E. BARKER, Oklahoma City, has been appointed as county physician.

DR. C. S. WALLACE, Holdenville, is doing postgraduate work in Chicago and Rochester.

DR. BASIL HAYES, Oklahoma City, has been appointed as physician to the Oklahoma County Home for Tuberculosis.

DR. H. C. BROWN and family, Enid, have returned from a trip to the Hawaiian Islands. They were absent two months.

DRS. S. E. MITCHELL and J. S. VITTUM, Muskogee, are attending the Reserve Officers meeting at Fort Sam Houston, Texas.

WESLEY HOSPITAL, Oklahoma City, held open house July 20th upon the occasion of formal opening of its new \$150,000.00 fireproof addition.

DR. R. A. WOLFORD, Muskogee, for four years assigned to the Veterans Bureau Hospital, has been transferred to Washington, Diagnostic Center. The departure of Dr. Wolford is regretted by many colleagues who recognized and appreciated his earnest efforts and abilities.

DR. L. L. SMITH, Avant, has moved to Duncan.

DR. I. L. CUMMINGS, Ada, has been attending Chicago clinics for two months.

DR. S. N. MAYBERRY, Enid, accompanied by his family is visiting Minnesota points.

DR. JULIAN FIELD, Enid, held a baby clinic in Perry July 14th, assisted by DR. D. F. COLDIRON.

DR. HORACE REED and family, Oklahoma City, have returned from an extended visit to European points.

THE DUNCAN CLINIC offered free anti-typhoid inoculations recently. More than 300 people took advantage of the offer.

DRS. WADE H. and FRANK SISLER, Tulsa, announce the establishment of the Bone and Joint Clinic, 8th and Elgin, Tulsa.

DR. CARL PUCKETT, Oklahoma City, formerly State Commissioner of Health, has been selected to head the Oklahoma Public Health Association, as managing director.

DR. L. S. WILLOUR, McAlester, is "doing time," militarily speaking, at Ft. Sam Houston, with the Medical Reserve. He is "Lording it" over his friends as "Colonel" Willour.

"DR. ROBERT TROSKY," allegedly from Petograd, is reported to have victimized Tulsa gullibles recently. Giving references from Albany, N. Y., he succeeded in cashing checks, of the "no fund" variety. Dr. W. Albert Cook requests that Oklahoma physicians be on their guard.

OSAGE COUNTY HOSPITAL, Pawhuska, has just been opened to the public. Twenty-seven private rooms and two wards of nine-bed capacity are available. Laundry, power-plant, furnace and pumps are installed in the basement. The staff is composed of every member of the Osage County Medical Society.

DR. ELIJAH S. SULLIVAN, Oklahoma City, was recently the victim of a brutal and cowardly assault at the hands of a former tenant. Dr. Sullivan was confined to the hospital for several days. Decoyed by a false telephone call, he had no opportunity for defense when the aggressor unexpectedly slugged him in a dark hallway.

OKLAHOMA CITY, perhaps of all cities, has been more excited and overheated with reference to nursing conditions than any city of its size in the Union. Papers almost daily have something to say of the dilemma of this splendidly managed city as to nursing conditions, when as a matter of fact, they do not know when they are well off. Perhaps close analysis of the situation will show that some city political clique is muddying the waters in the interests of some medical pet. It is regrettable, when we observe these matters, to realize that some political lubber, junk or other well-fitted commissioner is placed in a position to dictate the activities of medical science.

DR. T. F. SPURGEON and family, Frederick, are enjoying a motor trip through western states.

DR. and MRS. C. H. MCBURNEY, Clinton, leave on the 25th to attend the American Legion Convention in Paris in September, after which they will spend about three months touring Europe. During this time the doctor expects to visit some of the leading clinics and medical centers.

DR. W. B. WALLACE

Dr. W. B. Wallace was born January 25 1862, at West Gore, Nova Scotia, Dominion of Canada, received his B. A. degree in the Acadia University of Wolfville, Nova Scotia, in 1886. Graduated from John Hopkins Medical College, Baltimore, in 1891. Dr. Wallace came to the Indian Territory, locating at Lehigh, April 24, 1891. After a number of years, moved to Coalgate where he practiced his profession until the date of his death.

He was married to Miss Annie Richerson, November 14, 1892. Dr. and Mrs. Wallace have two children; one son, Otto, who now lives at Wichita Falls, Texas, and a daughter, Mrs. Mary Anna Willard. There are two grand children, Betty Ann and Patricia Wallace. Dr. Wallace also left one brother and one sister surviving him.

Dr. Wallace was a member of the Old Indian Territory Medical Association, a member of the Oklahoma State Medical Association, a member of the Southeastern Oklahoma Medical Association and also of the Atoka-Coal Counties Medical Societies. In the last named societies, he was always very active. He was recognized by his brother physicians as a man of ability and and deeply learned on medical subjects. However, he was a modest man, not given to talking or making a display of his knowledge.

One year ago Dr. Wallace was elected president of the Southeastern District Medical Association and was serving in this capacity at the date of his death.

It is with deep regret that we announce that on July 3rd, 1927, at Coalgate, Oklahoma, "The Black Camel, Death, stood suddenly at his door and he mounted at once, to return evermore."

The silver cord is loosed, the golden bowl is broken, the pitcher is broken at the fountain and the wheel is broken at the cistern and the dust returned to the earth as it was and the spirit unto God who gave it. We miss his presence, not only as our presiding officer in this meeting but as a co-worker and friend and a colleague in our association. It is with deep regret and sincere sympathy to the loved ones of Dr. Wallace that I introduce this resolution and move that same be spread upon the minutes of this Association, a copy be mailed to the Oklahoma State Medical Journal, a copy furnished to his family and a copy furnished the press.

J. S. FULTON

DR. E. E. NORVELL, Wynnewood, has moved to Shawnee.

DR. and MRS. L. M. WESTFALL, Oklahoma City, and daughter, Betty Lou, have returned from a month's motor trip through Minnesota and Southern Canada.

MUSKOGEE has officially settled its municipal hospital troubles. Upon recommendation of a sub-committee of the Commission, and after inspection and study of various sites, a very well-constructed building, conveniently located, was selected. Plans call for very complete remodeling to render it fireproof. Proponents of the plan claim that expenditure of approximately \$75,000.00 in this work will give the city more space than it will probably require for many years and at material saving.

DR. JOHN A. HAYNIE, Secretary, Southeastern Oklahoma Medical Association announces the following program of a meeting held July 14th, at McAlester: Welcome address, Dr. W. G. Ramsey, president, Pittsburg County Medical Society, Quintin Okla.; Response Dr. J. S. Fulton, president, Oklahoma State Medical Association, Atoka, Okla.; President's Address, Dr. W. B. Wallace, Coalgate, Okla.; Bone Tumors With Lantern Slides, Dr. G. E. Henschen, Sherman Texas; Some Remarks about the Treatment of the patient who has Disease of the Thyroid, Dr. LeRoy Long, Oklahoma City, Okla.; Post Caecal Appendicitis, Dr. E. J. Neathery, Sherman, Texas; The Result of Bone Graft Operation in Fracture of the Forearm with Lantern Slides, Dr. J. Spencer Davis, Dallas, Texas; Anaemia, Dr. Jas. L. Shuler, Durant, Okla.; Some Practical Points on the Treatment of Acute Diarrhea in Infants, Dr. Wayne A. Rupe, St. Louis, Mo. Dinner, 6:00 p. m.; 7:00 p. m. announcements and election of officers; 7:30 p. m. scientific program resumed; motor boating and fishing.

ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M. D.
117 North Robinson St., Oklahoma City

Treatment of Paraplegia By a New Procedure. Jacques Calve., Arch. franco belges de chir., XXVIII, March, 1926.

The author, in review of the subject of Pott's disease, states that the usual cause of compression of the cord is an abscess in the intraspinal antemedullary space and under pressure. This is equally so in the severer forms of rapid development as in the milder forms of slower progressive development of the disease. He cites in support of this assertion the twenty-two cases of transverse costosectomies by Menard, in cases of paraplegia which had resisted orthopaedic treatment and of which a certain number had lasted over a number of years. In each case, Menard found pus, either fluid or in caseous form.

Calve has tried to treat the cold abscess by a method of puncture. After studying the cadaver, he established a definite technique which, by the aid of a trochar sound possessing the proper curve, and passed through the opening near the articular process, allows an entrance to the extradural, antemedullary space the usual seat of the abscess and the cause of the cord compression.

The bony landmark for the opening in the articulation is invariably made by the angle of the external border of the lamina, and in the inferior border of the corresponding transverse process. Immediately behind this angle is found the opening of the articulation. The cutaneous landmark is a point two fingers width to the outside of the spinous process, it being understood that in the dorsal regions—the usual seat of the Pott's paraplegia—the spinous localization by a neurologist, of the site of the compression of the cord, would allow the introduction of the trochar sound in the opening to correspond exactly with the segment of the cord compression.

A number of figures supplied in the text show a number of operations by this method. Calve has applied this method to ten patients affected with Pott's disease of which the diagnosis has been established clinically and radiographically. These patients had total paraplegia occurring in the course of an increasing disease, and with a progress toward incurability, in spite of carefully applied orthopaedic treatment for several months. Of the ten cases of which the subsequent cause has been followed during many months and in some cases for many years, Calve has obtained seven complete recoveries and has had three failures.

The operation of this puncture of the antemedullary space has had no untoward accidents, either immediate or remote.

Osteoperiosteal Graft for Pott's Disease. Presentation of an Anatomical Specimen. Dujarier. Bull. de la Soc. de Chir. de Paris, LII, 1193, Dec. 18, 1926.

Dr. Dujarier presents an anatomical specimen of mid-dorsal Pott's disease; obtained postmortem three months after operation. The operation had consisted of placing on either side of the spinous process, over the denuded laminae, a flexible osteoperiosteal strip taken from the tibia according to the technique of Delageniere. One could see the anatomical fragment clearly as a bilateral osseous strip, fused with the laminae on the superior surface of four vertebrae, firm thick and resistant.

Leucaemia—A Sarcoma: Bone Evidence. Sydney M. Cone, Arch. Surg., XIV, 542. Feb. 1927.

Cone reports in detail two cases of leucaemia which come to necropsy and permitted microscopic study. Of particular interest is the effect on the bony structure. In which areas of oedema, pigmentation resulting from old hemorrhage, and destruction with sequestration, showed the invasive and destructive character of the "growth." Bone proliferation in the adjoining areas was noted as in other sarcomata of bone. The author is of the opinion that leucaemia is a sarcoma in which the cells may be formed by the mesenchymal cells of bone and marrow..

The Catarrhal Inflammation of the Nasal Accessory Sinuses and Its Diagnosis. Hirsch, O., Laryngoscope, 1927, xxxvii, 1.

Catarrhal inflammations of the nasal accessory sinuses are clinically, microscopically, and usually histologically, inflammations of a special type.

The author reports the findings in fifteen cases of recurring nasal polyps with negative washings of the antra which were operated upon. The chronic form of catarrhal antral inflammation was found in all cases of recurring

nasal polyps. In two, there was a catarrhal inflammation of other cavities in addition to the antrum.

Chronic antral inflammation appears in two forms: one which appears on the antral walls as oedematous ridges filling up the cavity completely, and another in which the antral mucosa is drawn out into a cord.

Histologically, the catarrhal antral inflammation is characterized by marked oedema and the separation of strands of connective tissue as in polyps.

All recurring nasal polyps are a sign of catarrhal inflammation of the accessory sinuses. Other signs are a serous discharge from the needle on puncture, the spontaneous discharge of serous fluid from the nose, a shadow in the antrum in the X-ray picture, and, most important, serous coryza. Most cases of vasomotor rhinitis are caused by catarrhal inflammation of the accessory sinuses.

In a few cases the nasal polypi subsided after the removal of chronic catarrhal mucosa.

The Relationship of Acute and Chronic Paranasal Sinus Disease to Systemic Conditions in Infants and Young Children, Cone, A. J. *Laryngoscope*, 1927, XXXVII, 19.

The author illustrates the very striking relationship that exists between paranasal sinus disease in young children and a widely diverse group of systemic conditions. He suggests that the exciting cause may be found in the upper respiratory tract.

A group of eleven cases of systemic disease in children under 11 years of age were carefully studied from the rhinolaryngological standpoint. The conditions included arthritis, eczema, asthma, chorea, bronchiectasis, malnutrition, anhydremia, nephritis, nephrosis, pyelitis, chronic ulcerative colitis, headache, and diabetes. These groups are discussed in detail. In many cases, the clinical course of the systemic disease was favorably influenced by the conservative or radical treatment of the co-existing paranasal sinus disease, and in some a complete cure resulted.

The author's method of treating sinusitis in young children is of special interest to rhinologists. He finds the nasopharyngoscope a very valuable diagnostic aid. With Dean, he regards roentgenograms as anatomical and not true pathological indicators.

The Intranasal Ethmoid and Frontal Sinus Operation; Technique; Report of Cases. Spielberg, W.; *Laryngoscope*, 1927, XXXVII, 79.

The author believes that the intranasal ethmoid and frontal sinus operations of Halle is the operation of choice and, with slight modifications, is to be preferred to all other methods in use at the present time. He reports twenty cases in which it was performed. The technique is as follows:

A 10 per cent cocaine solution is applied to the mucosa and a 0.5 per cent solution of novocain then injected. The middle turbinate is pushed out of the way against the septum. Two incisions are made—one beneath and horizontal to the middle turbinate and the other one-fourth inch below the first one. The ethmoid cells are opened with a sharp punch forceps followed by a small sharp curette. The anterior and preturbinal area is exposed by the formation of a mucoperiosteal flap by an incision from the head of

the middle turbinate upward to the roof of the nose, another incision made from this incision along the outer wall as far as the piriform aperture, and a third incision made from the second to the head of the middle turbinate. The flap is elevated and reflected downward, and agger nasi cells are chiseled away. The opening is then enlarged into the frontal sinus, the floor being removed and the work being done in a postero-anterior direction with a curette or an electric burr. The mucosa lining the frontal sinus is then curetted, and the flap replaced and fixed in position by an iodoform gauze pack.

On the third day after the operation the pack is removed and repeated irrigations are given.

This operation preserves the middle turbinate bone and leaves the nasal mucosa in as normal a state as possible. In other methods the middle turbinate is sacrificed in whole or in part and a good deal of the surrounding normal nasal mucosa is destroyed.

Injury to the cribriform plate, anterior cranial fossa and olfactory nerve filaments is practically impossible.

By the formation of the mucoperiosteal flap and preservation of the middle turbinate, postoperative scarring, dryness, and crust formation and a long drawn-out course of postoperative treatment are avoided.

So little damage is done the nasal structures that it is sometimes difficult to tell that an operation has been performed.

The operation opens up a route to the frontal sinus and establishes sufficient drainage without danger of the postoperative complications which so frequently result from intranasal surgery.

The intranasal frontal sinus operation should always be done first before the external operation is attempted as in the majority of cases it will result in a cure.

TUBERCULOSIS

Edited by L. J. Moorman, M.D.
912 Medical Arts Bldg., Oklahoma City

The Value of the Roentgen Ray as a Diagnostic Aid in the Diagnosis of Pulmonary and Pleural Diseases. — Charles R. Austrian, M.D., *The American Journal of The Medical Sciences*, July, 1927.

Roentgenography has become most important in the diagnosis of thoracic diseases, but in order to be most useful must be combined with all the older methods of physical diagnosis and used as a control for them. It can be fully utilized only by workers trained in anatomy, pathology, physiology and clinical medicine who know what is normal roentgenographically in the various decades of life. In order to recognize the changes caused by disease it is necessary that the normal be established. Five hundred healthy children were studied in an effort to do this but the X-ray findings varied so widely as to make a description of the normal impossible. Within certain limits, however, variations may be regarded as unimportant. Such is the hilum shadow unless very large and heavy and calcified nodes at the root of the lung with no other pulmonary changes. Radiations of the bronchial shadows in the outer zone of the lungs and in the apex are considered evidence of tuberculous changes. A clear adult chest is rarely seen because of the many respiratory infections, irritating dust, etc. Therefore

changes which would be significant in the youthful chest are regarded as normal in the adult. These include moderately enlarged root shadows, slight widening of the mediastinum and radiating, well defined, interlacing lines indicating fibrosis except when marked. The X-ray often locates the forms of diseases and determines its extent; it may show a focus in patients when physical examination does not because of its location or because it is masked by other conditions; it gives a graphic record of the progress or regression of the disease; it is invaluable in the location of foreign bodies not pervious to its rays; primary or metastatic tumors; localized pneumothorax and small pleural effusions. It often fails to disclose lesions in patients who have unmistakable evidence of pulmonary tuberculosis; tumors of an upper lobe have been incorrectly diagnosed as tuberculosis and occasional cases of acute fibrinous pleurisy show a negative x-ray. There is no satisfactory explanation for these discrepancies. Correctly used with the various findings properly correlated it is a most valuable aid in diagnosis.

Light Therapy.—Winthrop M. Phelps, M.D.—The New Albany Medical Herald, July, 1927.

While the use of light as a therapeutic agent is becoming more general little is known either of its actual nature or the manner in which it produces therapeutic changes. Investigation must be made as to the nature, therapeutic effects and dosage unit of light before it can be used to the best advantage. Light consists of a series of wave-lengths ranging from the very long wave-length used as carrier-waves in radio to the extremely short ultra-violet rays. Only a very small band of these wave-lengths is perceptible to us as light—those lying between 400, the first visible violet, and 720, the longest red we can see. The rays we feel as heat are the infra-red—longer than 720 millimicra—the ultra-violet or shorter than 400 we cannot appreciate. The sun is rich in all these rays but its light loses many rays at both ends of the spectrum in passing through the atmosphere of the earth. Invisible light follows the same laws as visible which complicates its exact use. Hess found that a certain band of ultra-violet, 301, cured rickets in rats but that including other ultra-violet rays cut down or even entirely vitiated the good results. This is on the same principle that if we mix yellow and blue visible light we have green with another wave length and probably a quite different effect. Some work is being done with ultra-violet screens which will pass certain rays of a known wave length only and which may give a more accurate basis for the use of this light. At present light is used largely in its whole form. The most common sources are the various types of basking apparatus producing infra-red and visible light mostly. The mercury vapor quartz light which is rich in ultra-violet, produces some visible light and a small amount of infra-red and the naked white flame carbon arc light which is the nearest approach we have to sun light. These three forms of light are used both for general and for local treatment. Little is known of the actual effect of whole light—it may cure rickets although this effect of the 301 band of rays may be neutralized by other rays in whole light—it causes tanning the importance of which is unknown at present. Used for general treatment it improves the muscle tone and appetite and increases the blood coagulability. In over doses it produces burns which may be fatal.

Visible light and ultra-violet mixed used generally produces tanning with probably an increased blood coagulability and a marked desquamation. Over doses produces burns which are rarely fatal. Visible and infra-red light mixed produce the usual effects of heat. Since ultra-violet rays do not penetrate more than a millimeter or two their use locally is irrational. Visible light penetrates more deeply and infra-red easily penetrates the entire body hence is the only form useful at present for local treatment. Ultra-violet has a band of rays bacteriacidal in effect but since these rays cannot penetrate they can be used for surface bacteria only and in a wide band of rays may be completely neutralized. The dosage of light required to produce a certain result is as yet unknown. The sun varies widely in the intensity and relative amounts of the various rays produced with the time of day, seasons of the year, and local weather conditions, while the various lamps and other apparatus vary with age of the instrument, the amount of current used and the distance from the patient. Dosage therefore cannot be entirely regulated by time—it is necessary to keep a constant graph of the sun by means of a thermople connected to a recording galvanometer, while artificial sources must be checked frequently. This can be done very simply by the use of the Lethophone of Dr. Clark of Baltimore. The light changes the Lethophone from white to a darker color the speed of this change indicating the intensity of the light. The rational use of light will be impossible until much more has been learned of its composition, effects and dosage. In the meantime its use should be dependent upon what is actually known about it and its dosage as carefully controlled as possible.

Parenchymal Pulmonary Tuberculosis in Children.—Cole B. Gibson and William E. Carroll.—The American Review of Tuberculosis, June, 1927.

Pulmonary tuberculosis occurs in children in three forms—the infantile which is widespread and general throughout both lungs, the most malignant form of this disease; the juvenile which is limited to the hilum or root of the lungs and is probably the most benign form of the disease; and the adult type with parenchymal lung tissue involvement behaving in much the same way it does in adults. The first and second types are much more common than the third. Of 855 patients admitted to Undercliff in the past seven years, ranging in ages from 5 months to 15 years, 87 showed definite pulmonary tuberculosis. While 54 per cent of the total number admitted were males and 46 per cent were females, 27 per cent of those with pulmonary tuberculosis were male while 60 per cent were female. It was possible to trace a definite exposure to phthisis in only 30 cases. Measles, pertussis, influenza and tonsillitis were the most frequent previous illnesses although a period of health had intervened between the illness and the onset of the tuberculosis in most cases, onset was ordinarily slow and obscure. Cough, loss of weight, fatigue, expectoration and fever were the most prominent symptoms. Night sweats occurred in about one-third of the cases and were of grave prognostic significance. Of 26 cases with this symptom 13 died, 7 were discharged hopeless, 2 were improved and 4 arrested. Hemoptysis occurred about as frequently as night sweats but was not of as grave import as it usually is in adults. It was possible

to obtain sputum in only 55 cases, of these 40 were positive for tubercle bacilli. Eighteen of these died after discharge, 5 are still in the hospital, 3 are living outside in hopeless condition while only 2 are known to be arrested. Positive sputum must therefore be regarded as a most serious sign in children. Many of these children had few or no symptoms and gave such an appearance of well-being as to make it most difficult to persuade them or their parents of the necessity of continuing treatment. These cases should be sought for assiduously and placed on a most rigid routine as the outcome is fatal in many cases. The most frequent location of disease was in both upper lobes, the right lobe being most frequently involved in unilateral cases. Prognosis was poor when more than two lobes were involved on admission. The average duration of illness in those patients who died was 1 year and 11 months. The average duration of illness in those reaching arrest was 4 years. Of the total 87 cases, 19 are well, 17 alive with active lesions, 49 are dead and 2 are unknown. The course of disease in those going on to arrest was usually one of steady improvement. Symptoms once abated rarely recurred. Healing was by fibrosis or calcification in most cases, one case, however, healed by resolution, the disease leaving neither clinical nor roentgenographic evidences. Tuberculous complications were few but greatly lessened chances for recovery when they did occur. Fifty-eight per cent of the females and 51 per cent of the males died; of the total deaths 71 per cent were among the female patients and 21 per cent among the males. The establishment of puberty in the females was accompanied by an increased death rate; girls at puberty with parenchymal involvement give the highest of all death rates from pulmonary tuberculosis. Pulmonary tuberculosis in children differs somewhat from that in adults showing fewer symptoms and complications but a higher death rate. Children with pulmonary tuberculosis because of their fewer symptoms must be more carefully guarded and girls at puberty required greatest care.

UROLOGY and SYPHILOLOGY

Edited by Rex Bolend, B.S., M.D.
1010 Medical Arts Building, Oklahoma City.

Hematuria With Urethral Stenosis

In the *Presse Medicale*, Duvergey and Dax state that in one of their cases of urethral stenosis, hematuria occurred intermittently during two years, in five others, it was continuous during a few weeks or months. The appearance of blood in the urine was usually spontaneous, sometimes following a transient retention. In all these cases, operation or cystoscopic examination revealed congestive or ulcerous lesions of the bladder. While mere dilatation of the urethra may suffice in some cases, in others internal urethrotomy or cystostomy is required.

Renal Infections.

Kellaway, Brown and Williams pointed out (*Med. Jour. of Australia*) that it was general to regard nearly all renal infection as blood borne. When, however, the innervation of the bladder was deranged or when obstruction from mechanical causes occurred in the outflow from the bladder, it was possible that ascending infection might occur by the lymphatics or through the

lumen of the ureter. They referred to the work of several investigators on the subject and pointed out that some experiments which favored ascent along the lumen, were not free from objection on the ground of insufficient control of the possibility of blood infection. They reported experiments carried out by themselves on guinea pigs, rabbits and cats in which partial obstruction of the urethra or disorganization of the nervous mechanism of micturition had been produced. In guinea pigs micro-organisms were used and in the other animals suspension of "oil blue" were injected into the bladder. It was found that neither failure to grow bacteria from the blood taken at autopsy nor a sterile hydro-nephrosis could be relied upon to exclude blood infection, though the latter control appeared to be efficient for the earlier hours of the experiment. It was found that blood cultures taken at autopsy could not be relied upon to detect bacteraemia during life.

Methylene Blue—Acriflavine.

The following should be of interest to the many who are using the above dyes more or less indiscriminately.

"Dr. Ralph Stockman (*Edinburgh Medical Journal*) has used methylene blue for many years past in treating cases of *B. coli* cystitis in doses of two grains (in pill) three or four times daily. Its action is quite definite and comparable to that of hexamine. The organisms and the pus and the subjective symptoms usually diminish very markedly in a few days, but the infection persists.

Acriflavine is stated by Browning and Gurbransen to have the very unusual property of being more active as a bactericide in serum solution than in water. It is excreted in the urine to which it imparts a deep yellow color and marked bactericidal properties in vitro, and they suggest that it may prove of value in combating infections of the kidney and urinary passages. It was given in a dose of one and one-half grains (0.1 gram) thrice daily in keratin capsules, and the necessity of administering it in this way proved to be a serious practical drawback. If the capsules were not sufficiently coated they burst in the stomach and cause severe and sometimes prolonged sickness, and if too thickly coated they were apt to pass through the intestine unchanged. With care, however, these drawbacks can be avoided and the urine kept of a deep yellow color. The urine did not prove to have any marked bactericidal properties in cases of *B. coli* and mild septic infections, and there took place merely a certain amount of inhibition of the bacterial growth. Acriflavine is much more active as a bactericide in alkaline than in acid media outside the body, but in several cases of *B. coli* cystitis Stockman has kept the urine alkaline for weeks at a time while acriflavine was being given, without perceptibly increasing its therapeutic effects."

CLIPPINGS FROM THE UROLOGIC AND CUTANEOUS REVIEW

In the acid pyuria, unless the cause is very obvious, look above the bladder for the lesion.

Persistent friction, systematically carried out, will nearly always bring back the growth of the hair on an alopecic patch. It must be combined, of course, with a rubefacient.

The wise man will not treat a patient with hematuria who refuses cystoscopic examination.

Look seriously upon the cardialgia of a known syphilitic. Syphilis loves the cardio-vascular system.

In nocturnal frequency in young people, hold the case to be a tuberculosis involvement until otherwise proven.

Subject all women complaining of bladder symptoms to a complete vaginal and pelvic examination as well as a cystoscopy.

Don't forget the etiological possibility of syphilis in joint disease. Whilst it is usually during the tertiary period that this complication happens, yet it may be a secondary complication, when the condition is usually a sub-acute synovitis.

Report of Examination for Licenses to Practice Medicine

Report of Oklahoma Board of Medical Examiners held at Oklahoma City, June 14-15, 1927; number of subjects examined in, 12; total number of questions, 120; percentage required to pass, 75; total number examined, 46; number passed, 46. All applicants, regular school of practice, and licensed by written examination.

	Year of Birth	Place of Birth	School of Graduation	Year of Graduation	Home Address or Previous Location
Cook, Henry Washington S.	1869		Meharry Med. Col.	1892	Ponca City, Okla.
Cooper, Fay Maxcy	1899		University of Ark.	1925	Oklahoma City
Terrell, Ernest Pierce	1897		Tulane Med.	1922	Shawnee, Okla.
Witcher, Robt. Bledsoe, Jr.	1899		Northwestern Med.	1925	Tulsa
Sugg, Alfred Roscoe	1834		University of Ark.	1924	Ada, Okla.
Cowgill, David Martin	1894	Topeka, Kan.	Washington Univ.	1924	Ponca City
Fleming, Jno. Wilborne, Jr	1884	Grove Hill, Ala.	Univ. of Alabama	1908	Asher, Okla.
Jones, William Edgar	1887	Molition, Ark.	Univ. of Louisville	1911	Seminole, Okla.
Richardson, Chas. Thos.	1892	Longville, Miss.	Univ. of Tenn.	1914	Seminole, Okla.
Rondebush, Mary Torrey	1893	St. Louis, Mo.	Johns Hopkins	1920	Norman
Sisler, Franklin Herbert	1887	Stewartstown, W. V.	Col. P. & S. Baltimore	1910	Tulsa
Johnson, Albert Christopher	1865	Keytesville, Mo.	Kcokuk Med.	1896	Parsons, Kan.
Pruett, William Veasy	1888	Aberdeen, Miss.	Miss. Med. Col.	1911	Memphis, Tenn.
Baird, Cecil Dryden	1902	Owensboro, Ky.	Univ. of Okla.	1927	Oklahoma City
Baker, Marguerite Madigan		Anthony, Kan.	Univ. of Okla.	1927	Oklahoma City
Bond, Ira Tarlton, Jr.	1900	Rush Springs, Okla.	Univ. of Okla.	1927	Oklahoma City
Brady, Richard Freeman	1902	Eric, Pa.	Western Reserve Me	1926	DeNoya, Okla.
Brewer, August M.	1901	Grimes, Okla.	Univ. of Okla.	1927	Oklahoma City
Brittain, Fannie Lou	1902	S. Pittsburg, Tenn.	Univ. of Okla.	1927	Oklahoma City
Cocn, James Randolph	1839	Great Bend, Kan.	Univ. of Okla.	1927	Oklahoma City
Collier, Eric Knox		Ycldell, Okla.	Tulane Med.	1926	Tipton, Okla.
Deaton, David Grady	1898	Decatur, Tex.	Univ. of Okla.	1927	Oklahoma City
Evans, Leo R.	1902	Galen, Kan.	Univ. of Okla.	1927	Oklahoma City
Faris, Brunel DeBost	1901	Kansas City, Kan.	Univ. of Okla.	1927	Oklahoma City
Foerster, Hervy Adolph	1903	Rogers City, Mich.	Univ. of Okla.	1927	Oklahoma City
Gonzales, Juan S.	1898	Philippine Islands	Univ. of Okla.	1927	Oklahoma City
Goodman, George Leroy	1898	Lexington, Okla.	Univ. of Okla.	1927	Shawnee
Gordon, James Maurice	1901	Techucana, Tex.	Univ. of Okla.	1927	Oklahoma City
Graening Paulus Kimball	1906	Iowa.	Univ. of Iowa	1926	Oklahoma City
Hamilton, Mary Wiseman	1899	Scotland	Univ. of Okla.	1927	Oklahoma City
Haney, Arthur Hubert	1896	Lexington, Tenn.	Univ. of Okla.	1927	Oklahoma City
Harris, Henry Washington			Univ. of Okla.	1927	Oklahoma City
Hart, Marshall Oscar	1900	Lexington, Okla.	Univ. of Okla.	1927	Oklahoma City
Hodgson, Cella Monroe	1903	Kingfisher, Okla.	Univ. of Okla.	1927	Kingfisher, Okla.
Hyroop, Gilbert Louis		Kansas City, Kan.	Univ. of Okla.	1927	Oklahoma City
Jeter, Hugh Gilbert	1895	Alden, Kan.	Univ. of Louisville	1925	Oklahoma City
Kippenberger, Rinhart F.	1898	Thomas, Okla.	Univ. of Okla.	1927	Oklahoma City
LeHew, John Lisle, Jr.	1901	Pawnee, Okla.	Univ. of Okla.	1927	Pawnee, Okla.
McGrath, Thos. James	1902		Univ. of Okla.	1927	Sayre, Okla.
Meyers, William Arthur	1890	New York City	Univ. of Okla.	1927	Oklahoma City
Miles, John B.		Edwardsville, Ill.	Univ. of Okla.	1927	Norman, Okla.
Miller, Nesbitt L.	1901	Oklahoma City	Univ. of Okla.	1927	Oklahoma City
Moore, Clifford Wesley	1903	Keota, Okla.	Univ. of Okla.	1927	Keota, Okla.
Mote, Wesley Russell	1904	Perkins, Okla.	Univ. of Okla.	1927	Oklahoma City
Parsley, Frank Edmund	1896	Pawnee, Ill.	Univ. of Okla.	1927	Newkirk, Okla.
Patterson, Frank					
Baumgardner, Jr.	1898	Great Bend, Kan.	Univ. of Okla.	1927	El Reno, Okla.
Ransone, John Taylor	1893	Hampton, Va.	Baylor Med.	1927	Cleburne, Tex.
Reed, James Robert	1900	Nebraska	Univ. of Okla.	1927	Oklahoma City
Reid, Frank I.		Blair, Okla.	Univ. of Okla.	1927	Norman, Okla.
Roberts, Buford B.	1900	Sparksville, Ky.	Univ. of Okla.	1927	Blair, Okla.
Saddoris, Marvin LeRoy	1902	Herrington, Kan.	Univ. of Okla.	1927	Oklahoma City
Selders, Raymond Everett	1832	Wada Petra, Ill.	Univ. of Okla.	1927	Oklahoma City
Shippey, William Laton	1903	Wister, Okla.	Univ. of Okla.	1927	Wister, Okla.
Stough, Daniel F.	1902	Lynn, Kan.	Univ. of Okla.	1927	Geary, Okla.
Walker, William Archibald	1892	Harrison, Ark.	Univ. of Okla.	1927	Oklahoma City
Wilkins, Harry	1902	Mena, Ark.	Univ. of Okla.	1927	Oklahoma City
Williams, Gordon Darnall	1901	Weatherford, Okla.	Univ. of Okla.	1927	Weatherford, Okla.
Wolf, John Powers	1897	Ballard, Mo.	Univ. of Okla.	1927	Wakomis, Okla.
Weber, Sherwell G.	1900	Dempseytown, Pa.	Northwestern Med.	1927	Bartlesville, Okla.
Feehan, William Joseph	1901	Holy Goss, Kan.	Creighton Univ.	1926	K. C., Mo.
Gier, Wilbur Joseph	1885	Walnut, Kan.	Hahnemann Med. Col.	1917	Independence, Kan.

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J. M. BYRUM, Secretary.

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THE FIBROID UTERUS*

LOUIS H. RITZHAUPT, M. D.
GUTHRIE

The uterus, the organ of the human female, which is the primary seat of developing human life, also seems to be the seat of considerable trouble, chiefly among which is the condition commonly known as the "fibroid uterus," or fibromyoma of the uterus.

The fibromyoma of the uterus is a tumor composed of fibrous and involuntary muscular tissue. As it develops usually a distinct capsule is evident and separates it from the surrounding uterine wall. The relation of the tumor to the wall gives to it a classification. First, those that are buried in the wall are known as intramural or interstitial fibroids. These are more common—about sixty per cent of the cases. Second, as this tumor is pushed toward the peritoneum it is called a subserous or subperitoneal fibroid. About twenty-five per cent belong to this type. Third, as the tumor pushes outward and lies beneath the endometrium, it is known as a submucous fibroid. About ten per cent belong to this class. Either of the last two varieties may become pediculated and if their uterine connections are severed, and its nourishment received through other attachments, we term it as a "parasitic" or "wandering fibroid."

In most cases the fibroid is hard; however, in one special type, the adenomyomata, certain of the gland elements are found intermingled with the fibrous and muscle tissue. The gland secretion is retained, giving a soft or cystic character to the fibroid. In most of these cases the tumor masses are not encapsulated but are more diffuse, usually being found on the posterior wall extending toward one or both tubal angles.

The cause of this peculiar intra-uterine development is unknown. However, some

of the theories are worthy of note. Especially the one suggesting that the fibroids are developed from embryonic cells, possibly from the Wolffian duct remains. This in my mind, is strengthened to some extent by the fact that they occur most frequently in middle life or the period of sexual activity. However, one thing may be safely stated; this tumor formation is the expression of a certain insufficiency of the body with a simultaneous local predisposition or alteration. Constitution and heredity are undoubtedly etiological factors.

The symptoms that call attention to the presence of the tumors vary considerably. The subject complains of pain or a full, weighty feeling in the pelvis, and associated with irregular bleeding from the uterine cavity. A vaginal bi-manual examination usually will reveal the condition that exists, especially if the fibroids are very large, and have started to undergo degeneration. At which time the patient manifests to a more or less extent, various constitutional symptoms as, anemia, myocarditis, nephritis, varices and swelling of the legs.

It is not my desire to dwell on the symptoms or treatments of the evident fibroid uterus, for each surgeon recognizes them and treats them according to his best judgment.

I wish, however, to stimulate your thought and research on the "fibroid uterus," that is rather rare and is treated by the internist for perverted ovarian function or by the neurologist for some form of insanity.

The type which is marked by a reflex neurosis without any other subjective symptoms, and only a very slight objective enlargement of the uterus, and a moderate increase in bleeding. The pathologists render you a report as follows:

Laboratory No. OS51-26—Microscopical examination shows uterine tissue in which there is a general increase in fibrous connective tissue, thickening of the blood vessel walls and hyaline degenera-

*Read before the Section on Surgery and Gynecology, Annual Meeting Oklahoma State Medical Association, Muskogee, May, 1927.

tion in some areas. There is a definitely encapsulated tumor mass in one portion, this mass being made up largely of strands, bundles and cords of smooth muscle cells. We find no evidence of malignancy.

Diagnosis Leiomyoma (Fibroids) — My attention was called to this type of uterus seven years ago by the case which I reviewed for you from the lantern slide. Since that time twenty-two cases have come under my observation. Two were treated by radium with satisfactory objective symptoms, but the neuroses were not improved. Three were treated with X-ray and good improvement noted. However, they must be controlled to a more or less extent by sedatives and ovarian extracts. Seventeen were operated.

It may seem a paradox, but nothing has set back the scientific investigation of uterine myoma and its correct treatment so much as the fact that up to the present time morbid anatomy has occupied so prominent a place in the study of the condition and secondly, the fact that X-ray therapy is so extensively used in its treatment. Pathological anatomy did not permit us to abandon the idea that a myoma is a local disease of the uterus, and X-ray therapy, through its often uncritical application and the prejudiced view of the surgeons has been a great obstacle in that the proper treatment has not always been chosen for the individual case. This may explain the fact that at the present time no reliable data concerning the origin and correlations of uterine myoma are available.

A definite influence must be ascribed to the relationship between the ovaries and the uterus, which is much more complicated than is generally assumed. That any such relation is present in myomatous patients was first recognized by Hegar, who observed, after the removal of both ovaries, not only a retardation of the growth but also an involution. The functional relations between the uterus and ovaries are reciprocal both in health and in disease. This is not yet generally recognized.

The ovaries of myomatous patients often show abnormalities. They are enlarged, oedematous and have a slightly yellow tinge, and besides they contain a more or less definite number of follicular cysts. They are designated as myoma-ovaries. The explanation of these findings is not quite clear. One can assume

that this change in the ovaries is the result of the myoma formation, but the opposite is also possible; namely, the ovarian changes can be regarded as an etiological factor in the production of myomata. Furthermore, myomata are sometimes observed in patients in whom the ovaries show no involvement in either an anatomical or functional respect. To this group belong the myomata that show the first clinical symptoms after the cessation of ovarian function, or those myomata which are not inhibited in their growth by repression of ovarian activity.

The functional disturbances, which vary according to the site of the myoma, are not limited to the ovaries alone. In cases of longer duration further internal secretory disturbances follow. Consequently, an intoxication manifests itself especially in the circulatory and nervous systems. This explains the pathological changes that are produced. In pronounced neglected cases the "facies myomatosa" is a characteristic expression of a generalized disease originating in the uterine myoma.

In the treatment of myomata, all known factors in the causation of them should be eliminated, and an early diagnosis made.

The regulation of metabolism plays an important part as it is based in a large measure on internal secretion. Circulatory disturbances of the pelvis of whatever origin must be eliminated. This associated with intelligent use of organotherapy, hydrotherapy and electro-therapeutics may avoid the more radical treatment, such as hysterectomy or sterilization by the X-ray. My observation, is that the X-ray besides producing a local effect at the site of application, exerts an influence on the whole body, especially on the internal secretory apparatus; for it hardly seems probable that the effect of these rays are limited to the functional elimination of the ovary or the non-toxic destruction of the fibro-myomata themselves.

On the seventeen cases which have come to operation, a recognition of the importance of preserving the uterus has been followed and the extent of surgery adapted to the individual case, varying from a removal of the fibroma and capsule to a complete super-vaginal hysterectomy.

The result has been very satisfactory. The surgical removal of the uterus or a

part of it does not lead to an immediate damage of the ovaries. Therefore, the internal secretory apparatus has time to adjust itself.

The patients' mental symptoms clear up and the circulatory system returns to normal. Although the child-bearing period is terminated, for I believe sterilization is an important factor in the treatment, you have a satisfied patient, a grateful family and inquiry from her friends as to what kind of an operation you did to restore her mentality.

CANCER OF THE CERVIX*

W. H. LIVERMORE, M.D.
CHICKASHA

This important subject needs much discussion and study that we may all be on our guard for the early manifestations of the disease. There is no other disease where the early recognition and treatment means more to the patient.

The fact that early cancer of the cervix causes very little disturbance or discomfort makes it a menace to life, as the victim is unaware of the presence of the cancer until it is well advanced, possibly beyond hopes of recovery.

There are few early symptoms of cervical cancer. I want to emphasize the most important symptom—the symptom that often waves the danger flag for weeks and months before any attention is given it. This symptom is hemorrhage. Not a profuse hemorrhage, not a hemorrhage of enough magnitude to necessitate the uses of a napkin, but a slight spotting hemorrhage noticed first after intercourse or after going to stool—a hemorrhage that only spots the clothing. This occurs more profusely at period times, but cannot be noted then, but it also occurs between the periods. The more pronounced hemorrhage from cancer of cervix comes late in the disease, after the foul smelling discharge of sloughing cancer tissue has persisted some time.

Any cervix that bleeds on slight examination is a dangerous cervix and should be looked upon as potential cancer cervix.

We as surgeons see by far more cancers of cervix that have gone on to the advanced stage than we do of the early stage. Therefore we urge all medical

men to be more suspicious of these conditions that we may treat more early cancers than late ones.

In our surgical experience we have had some beautiful results from surgery and have some four or five cases living after five years from date of operation. But there are many more that were not so beautiful. Cases where we saw the recurrence, and experienced the disappointment and hopelessness of these recurrences.

At the Chickasha Hospital we have quit the knife in operations on cervical cancers. We now rely on radium in all cases of cervical cancers that we treat. At first, we used radium only in the advanced cases where we knew that the disease could not be removed by surgery. Our results were so strikingly satisfactory and the reports from other clinics so favorable, that we began the use of radium in all cervical cancers, except those where the disease had extended to the deep pelvic structures. In these cases radium is useless and only causes others to defer treatment by its failure.

It is amazing the amount of raying the uterine tissue will stand. It will stand enough to completely kill or inhibit the cancer cells, with only a marked fibrosis of the uterine tissue. One must use care in the application of radium to the cervix and avoid traumatizing the tissues as much as possible. Dilatation of the cervix should be gentle and great care used, giving plenty of time for dilatation to take place with as little injury as possible, lest the cancer cells be passed on into the lymph stream.

One must protect the bladder and bowel from the rays of the radium as they do not stand raying and damage may easily be done to these organs unless they are protected by being emptied before application of radium to the cervix and then packed away from the radium as far as possible. It takes some skill and practice to pack a vagina so as to hold the radium in the cervix for the required time.

After the radium is applied to the cervix and vagina packed, the patient should stay in a recumbent position as there is less danger of the pack being dislocated. The bladder should be emptied by catheter to avoid distension.

Our results have been so satisfactory and the reports from other clinics so favorable that we feel we are offering our

*Read before the Section on Surgery and Gynecology, Annual Meeting Oklahoma State Medical Association, Muskogee, May, 1927.

cases of cervical cancer more hope for cessation of the disease than we did before adopting the use of radium. Not only does it appear that the ultimate results are better but there is less discomfort, less danger and less confinement in this treatment than the use of the knife or cautery.

Discussion: DR. G. WALL, TULSA.

In using radium Harris says that its value depends upon the following conclusions: (1) The amount used. (2) Amount and nature of filtration. (3) Distance from the tube or tissue. (4) Length of exposure. (5) Resistance of the tissue. (6) Intervals between applications to be judged by the surgeon. The local effects in favorable cases are very remarkable. The discharge, odor and bleeding stop and pain is relieved almost at once, and the mass and nodules disappear.

In some apparently hopeless cases we find that they are entirely cured and a microscopic examination shows partial or complete disappearance of the cancer cells, connective tissue taking their place. And many inoperable cases are made operable by its use.

In recurrences following radical operation favorable results have, at times, been obtained and this is especially true, if the recurrence is in the scar tissue in the vault of the vagina, but all cases do not react favorably, and in advanced stages it may stimulate the growth to increased activity and hasten death.

It seems to be the consensus of opinion that the younger the cell, whether it be cancerous or normal, the more sensitive it is to radium.

In pelvic infections peritonitis is apt to follow its application and in bladder and rectal wall involvement large fistulas may result, hence in these cases it is contra-indicated, and also in most advanced cases.

Radical operation too soon following the application increases the danger of sepsis, because latent organisms are stirred into new activity or the resisting power is lowered by devitalizing normal tissues. If used before operation it may produce so much sclerotic tissue that it makes the operation very difficult.

The best results with radium are gotten by the gynecologists, because the tendency for cervical cancer to metastasize is very small.

In involvement of the regional lymph glands it is perhaps the best to use the X-ray, since it seems to have more power to act in these cases.

EPITHELIOMA OF THE LIP AND FACE*

C. P. BONDURANT, M.D.
OKLAHOMA CITY

When we open the subject of "Epithelioma of the Lip and Face," we have chosen one on which there are many and varied opinions. General usage in dermatology has confined the term to malignant epithelioma of the skin, and here it will be considered as carcinoma beginning in the epithelial structures. These lesions are among the most frequent and most important of cutaneous pathology. Clinically they are divided into papillary, discoid, superficial, and deep, with the various subdivisions. When we consider the histopathology they fall into two distinct groups; the basal cell and the prickle cell varieties. It is under these two headings that the diagnosis and management of these lesions will be studied. Among the malignant lesions which come under observation, epithelioma of the lip and face are not the most frequent but because of their conspicuous position and the general appreciation of the public of their seriousness they have received more attention than other cancers equally as grave. In spite of the fact that we possess reasonably effective measures in the management and control of cancer our results are far from perfect. There is still a high mortality, and many cases of comparatively benign basal cell epitheliomata eventually succeed in complete exhaustion of the patient.

There is a limitation to the value of our present methods of treatment, but if these methods were closely studied and applied with an early diagnosis, they are capable of almost a complete eradication of the disease. Our outstanding need is education of the lay public. It must be taught that we possess effective measures in the management of cancer, if the treatment is begun early, and that a physician must be consulted when persistent lesions are noted on the skin or mucous membrane.

*Read before the Section on Genito-Urinary Diseases, Dermatology and Radiology, Annual Meeting Oklahoma State Medical Association, Muskogee, May, 1927.

A brief review of the literature with reference to incidence and some possible etiological factors would not be without interest. Brewer collected the reports from 31 clinics totaling 3889 cases and it is estimated from these that 2 to 3 per cent of cancer subjects seeking treatment, the primary disease is located on the lower lip and that lesions on the lower lip are twelve times as frequent as those on the upper lip. Whenever the lesion is primary on the mucus membrane or vermillion border of the lip, they are nearly all of the prickle cell variety. The analysis from 5 clinics totaling 694 cases, 637 were on the lower lip and 57 on the upper lip. In 35 cases both lips were involved, the age of selection being between the 5th and 7th decades of life, with 95 per cent of the cases occurring in males. Through a personal communication Dr. Robert Kennedy who made a survey of these cases at the New York Skin and Cancer Hospital gave the following figures: 90 per cent of cases were of the prickle cell type (by microscopic diagnosis) average age 57.9 years, 94 per cent males, use of tobacco admitted in 83 per cent, average duration of symptoms 1.4 years. Left side of lip involved twice as often as right side. In the cases in which the lymph nodes were not palpable, 11 per cent showed epithelioma in the lymph nodes in the pathological examination after block dissection. It is of interest and importance that while cancer in all its forms is far less frequent in the colored races, the vital statistics of the District of Columbia show that among the deaths of white women over 70 years of age, 8.04 per 100,000 die of cancer of the lip, while in negro women of the same age, the death rate from this cause is 30.1 per 100,000. These figures point strongly to smoking as the most likely etiological factor. Bloodgood blames it in nearly all cases. While these and many other factors are blamed with the cause of cancer we must regard the source of more or less constant irritation as a causative agent here, as elsewhere. Crile's report of 4500 autopsies gives valuable points on metastasis. In only 1 per cent were secondary foci found in organs beyond the lymphatic collar in the neck when the primary lesion was on the head or neck. With these factors of chronic irritation, are the presence of some lesion or trauma producing a loss of epithelial covering. Paine, director of the Cancer Hospital Research Institute of London is of the opinion that cancer is

not a specific disease but is the result of a disordered growth of epithelium caused by various chemical and physical irritants of which the most important are the toxins of micro-organisms. The results of such a damage would be the degeneration of the nobler parts of the cell, thus allowing a persistent over growth.

Very important in a discussion of epithelioma of the lip and face is a consideration of the fore-runners of cancer proper.

I wish to call attention to these lesions. It is known that both the basil cell and prickle cell epitheliomata may come from an unaltered skin, but they are most commonly preceded by simple, senile, or seborrhoeic keratoses, and we can conservatively consider these dermatoses as potentially dangerous, and advise their complete removal. It is not easy to distinguish between these nor is it always possible to predict the variety of cancer that may develop from these. Both varieties of epitheliomata have been noted as developing from many different keratoses, however, the basil celled variety is most commonly seen. The discussion would be incomplete without mentioning the degenerated mole, and the precancerous dermatoses of Bowen. There is a familiar tendency of moles to undergo degenerative changes, and this constitutes the real danger in moles. Lately so much attention has been given to this possibility of malignancy that I think this danger has been exaggerated. When we remember that hardly an individual lives that has no moles, the relative infrequency of their degeneration becomes evident. By far the most important is the black or slate blue mole which may present various clinical pictures. These are the growths which are the most unstable and from which the vicious melanotic cancers develop.

Bowen's disease is a form of precancerous lesion first described by Bowen in 1912. It may affect any portion of the skin and begins as a small papule of pale red color which is painless. The papule is covered with a thickening of the horny layer accompanied by a serous exudate which results in the formation of a cornified crust. This disorder is chronic and progressive and the resulting malignancy which may be delayed for a long period is usually of the basil cell type. In all pre-epithelomatous lesions the thickened horny layer is secondary to changes in one or more of the underlying layers of epidermis, as shown first by Unna, and later by Fordyce, Hartzell, Darier, and others. Ha-

zen estimates that five per cent of combined, simple, senile, and seborrhic keratoses undergo malignant changes.

I do not think that I would be condemned if I did not mention the following forms of treatment: solid carbon dioxide, curetting without addition of no other treatment, electrolysis, diathermy, caustics, and internal medication in the form of arsenic,



FIG. 1. — TYPICAL BASAL CELL EPITHELIOMA (RODENT ULCER) SEVERAL YEARS DURATION.

dietetic and hygienic measures, and caldial lead, and finally the administration of serums and vaccines.

There are three methods of treating cutaneous cancer that have met with recognition and may be considered as legitimate means of combating this malady. They are: 1, Excision; 2, Curette with cauterization, and 3, X-Ray and radium. These shall be considered separately. The subject of excision is of great interest, yet there is little that can be said concerning it. The indications for this form of management are definite and if the lesion can be excised a permanent cure will be the result. Excision is indicated in small lesions in locations such as the cheek or lip where the wound can be sutured with a small scar. In other locations such as the nose and eye lid excision is difficult and the resulting deformity objectionable. The well known weakness of this method is the constant temptation to have a good cosmetic result with the consequent retention of

cancer cells in the scar. Whenever this method is employed the lines of excision should extend well beyond the borders of the lesion, at least 1-4 inch beyond the affected areas. When lymphatic involvement is apparent, the block dissection should be done, and not depend upon radium or X-ray.

The curette and caustic method consists in the free use of the curette followed by the use of chemical agent's actual heat, or coagulation by electricity. When electricity is employed the fulgurating spark of De Keating Hart is of great value. Desiccation of William Clark may also be used. These should be made use of, though, only in conjunction with other measures, usually X-ray. The purpose is in large lesion to remove the microscopic evidence of the disease before the application of the rays. It has been the hope of some enthusiasts of this procedure to prove a selective action of the spark for pathological tissues.



TYPICAL PRICKLE CELL EPITHELIOMA—FOUR MONTHS DURATION.

Some other factors, such as "mechanical action," "inhibitory action," and "predisposed affinity" of certain chemical caustics, particularly zinc chloride and arsenic acid for cancerous tissue, has been the dream of others. It is an old knowledge that a sharp inflammatory reaction is of value in many cutaneous affections, and I think this supposed affinity of certain

caustics for pathological tissue can be accounted for in this manner. It is most difficult to concede a selective action of caustics on malignant tissue such as is possessed by the rays of radium and x-ray. Certain caustics, particularly acid nitrate of mercury, produce less destruction of normal tissue than of malignant tissue, but this is in the same sense that the latter responds easier to the curette. A popular method where cauterization is indicated is that first employed by Sherwell. The method consists of thorough curetting with free application of acid nitrate of mercury. This is my choice of method.

A definite place may be claimed for the use of radium and X-ray in the treatment of malignancy. The Beta rays and probably the long Gamma rays of radium may at times produce results in lesions that will not respond to X-ray, but generally speaking, the effectiveness of these two agents on cutaneous cancer are the same. It is not proposed here to discuss the technique of their use. It is enough to say that when they are correctly applied they constitute a reliable method in the treatment of selected cases of skin malignancy. They have many advantages as well as contra indications. The cosmetic result, absence of pain, the saving of time, and inconvenience are favorable factors. The contra indications are only in the type of lesions treated. The best results can be obtained from these measures by the intensive method of treatment, that is, the application of skin tolerance doses given at one sitting and repeated at monthly intervals. There is no one method known that meets the indication in a satisfactory manner, therefore it is our duty to inform our patient as to the seriousness of his affection and to advise generally combined methods of treatment.

In the selection of a method of treatment of epithelioma of the lip and face we must consider the various types of lesions and discuss them in their relation to the three methods already described. Epithelioma has been divided into, first, basal cell and second, prickle cell types. Basal cell lesions do not metastasize and are of comparatively slow growth so the element of time is of small importance. Any method which will destroy the lesion totally will produce a permanent cure, so any of the three methods named may be employed with about equal surety. Statistics have not favored any one method in the treatment of the basal cell type of

lesion. Hazen and Bloodgood give 86 per cent cures in unselected cases and 93 per cent in selected cases. Sherwell considers 90 per cent of his unselected cases healed. MacKee has recorded 268 unselected cases of basal cell epithelioma treated by the intensive method with X-ray and places his permanent cures at 90 per cent. By selecting his cases he records 95 per cent. I believe that X-ray and radium constitute the method of election for untreated lesions of the basal celled variety. In case they do not respond and the growth is small, I favor excision, otherwise Sherwell's method is indicated.

In the management of the prickle cell epitheliomata of the lip and face we do not have such a wide choice of treatment. In this type of epithelioma we are dealing with a most dangerous cancer. The rapid growth and early metastases are the factors of importance in the evolution of this lesion. In the treatment of this form of cutaneous malignancy there is but one choice, that is its early and complete destruction, and to forget the lymph drainage is dangerous and is to invite disappointment. We should not let these dangers be over shadowed by our consideration for the comfort of the patient, for his convenience or for the cosmetic result. For the experienced clinician there should be little difficulty in the differentiation between the basal cell and prickle cell types of cutaneous cancer, but do not think that this is always possible. In case of any question, the lesions should be considered as malignant and treated accordingly. The method of diagnosis by biopsy is still practiced in some clinics but generally it has been abandoned as dangerous and unnecessary. Personally, I do not make use of this procedure, as the manipulation favors metastases by displacing malignant cells and by opening lymph channels. I also disapprove of the use of the curette or an incision for the implantation of radium for the same reason. The cautery has been suggested for the purpose, but there is a growing conviction that removal of a piece of tissue from these lesions for microscopic study is unwise. The entire lesion should be excised when possible. This method, besides being a correct form of treatment, affords the advantage of a microscopic diagnosis, which is apparent when we read the various statistics reported in the literature. The microscopic study of every malignant neoplasm of the lip and face should include a study of serial sec-

tions not only for pathological diagnosis but to determine whether or not the entire growth has been removed. In this type of epithelioma the management of the lymph drainage or the regional nodes in the path of drainage is of the greatest importance. This is outstanding when we study the cases in which there are recurrences. As already noted 11 per cent of these nodes show epithelioma in microscopic sections where they were not palpable before operation. There is no method so effective in the management of this form of pathology as the block dissection, the principle of which was first introduced into cancer surgery by Halsted and Willy Meyer in consideration of cancer of the breast. In 1908 Judd called attention to the fact that the submucous lymphatics of the lower lip drained into the submental nodes while the adjacent subcutaneous lymph vessels almost all passed to the nodes surrounding the submaxillary gland. He also suggested the removal of this gland as numerous lymph nodes were in close relation with it and often occupy deep recesses in the gland substance. In advanced cases removal of the cervical chain both superficial and deep is indicated. Beckman, in a wide experience, did not find cancerous cell in the lymphatics leading from the primary lesion to the involved nodes. This observation justifies the technique of leaving intact the tissue between the nodes and the primary lesion, and the removal of the related lymph nodes beneath the jaw. The question of palpable nodes being the only indication for treatment of these parts is without basis. I have made repeated microscopic studies on cases where the nodes were not palpable and found cancerous involvement; while in other cases of palpable nodes, the enlargement was found to be due to inflammatory processes. Palpation does not give an accurate index to the presence of glandular metastases. I consider the indication for the removal of the lymphatic nodes of the neck when associated with supposed malignancy of the lip and face, a microscopical diagnosis, and a patient whose general condition would warrant such a procedure. Upon removal, if these nodes are found to be involved then we are allowed to employ the additional use of irradiation by X-ray. I do not favor the use of radium for this purpose because of the uncertainty in distribution of the dosage. It is true that

X-ray and radium will cure an early malignancy with a certain amount of surety and if the lesion is small and without induration, such treatment may be feasible, but there is a growing conviction that this management of the prickle cell type of cancer is not good practice. Ninety-five per cent of the microscopically diagnosed malignancies of the lower lip are of the prickle cell type. Generally speaking, X-ray and radium should be reserved for the basal cell lesions and used only in inoperable cases of the other type. The fact that X-ray and radium exert a certain amount of influence warrant their usage as adjuvants to other measures. Crile's analysis of 4500 autopsies shows that when death results from cancer primary on the lip and face, it is because of local and regional disease, and not by distant invasion. The collar of lymphatic about the neck form an almost impassable barrier through which malignant cells seldom pass. Every portion of this potentially involved lymphatic tissue is readily removable by the block dissection.

CONCLUSIONS

1. The general public should be informed of the importance of early diagnosis in all cases of malignancy, and of the possibilities of proper treatment when applied with an early diagnosis.

2. All potentially cancerous lesions should receive prompt attention and the dangers of incomplete removal is of great importance.

3. The basal cell epitheliomata (Rodent Ulcers) Fig. 1, can be successfully treated by X-ray and radium, except when cartilage is involved and then excision is the best management. The history and character of the lesion are sufficient for a diagnosis, but when there is any doubt they should be treated as the prickle type.

4. The management of the prickle cell epitheliomata, Fig. 2, is definite. Complete excision should be the only form of treatment, except in inoperable cases. Radium and X-ray should not be trusted in metastasizing cancer such as is usually seen on the lip. A microscopic diagnosis must always be made, and when this is found positive the nodes of the neck should be removed. These are potentially involved in all prickle cell lesions of the lip and face, and a microscopic diagnosis should be the indication for the block dissection of the neck rather than waiting for the nodes to be palpable.

ENDOTHELIOMA—CASE REPORT*

J. R. ANDERSON, B.A., M.D.
TULSA

A white man, N. B., age, 44, had a tumor mass, apparently an encapsulated simple fibroma, on the outer portion of the plantar surface of the right foot, smooth, rounded and about one inch in diameter. But upon attempting to remove it, under local anaesthesia, the surgeon found it to be a rather extensive, diffuse growth extending along the plantar surface almost to the tarsus. The growth was incompletely removed and sections made with a microscopic diagnosis of endothelioma. The wound failed to heal and two weeks following the operation the patient was sent to me for treatment.

The treatment I gave him consisted of three X-ray treatments with intervals of twenty-one and twenty-four days. In the first two treatments I gave him a full erythema dose of radiation on both the plantar and dorsal surfaces, consisting of 9-inch gap, 5 M.A., 12-inch distance with 3 mm. aluminum filter. After the second treatment, there was some improvement, though the wound continued to heal over and break down. The third treatment was given on the plantar surface only, and the lesion, although showing no recurrence, appeared indolent, due I feel, at least in part, to the excessive radiation. Some five weeks later the wound had healed, but the patient failed to return for inspection of the lesion and the subsequent history is unknown.

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CARBON MONOXIDE POISONING*

H. T. BALLANTINE, M.D.
MUSKOGEE

Asphyxiation by carbon monoxide, and allied gases is markedly on the increase. This is due to many things, but chief among them are to be found, an increase in conditions producing these gases, a false sense of security around heating apparatus and an increase both actual and relative in the gas itself. The universal

use of gas or gas products along with coal and coke; the use of engines incompletely combusting these heat developing substances, and the notorious tendency of the average individual to take a chance, is each year taking toll of an increasing number of persons. The advent of flueless gas stoves; known generally as complete combustion stoves, the rapid increase of motor vehicles whose exhaust pours out volumes of gases in which carbon monoxide predominates, and the constant formation of the deadly sewer gases, are to be looked upon as serious factors in our ever increasing mortality statistics. Only by the continued sounding of warnings against these dangers can we hope to stay or lower this seriously rising tide. Until one begins to delve into the records concerning carbon monoxide poisoning he is likely to dismiss the thought of danger as being largely an exaggerated one, but once he does seriously consider the somewhat meager reports available, he is struck not only with the very actual danger existing but by the comparatively small amount of work that is being done to check this increase of insidious poisoning. Erb, quoting the Metropolitan Life Insurance Company's statistics for 1924, shows that among their 15,500,000 policy holders, there were, for that year, 588 deaths, and of these 365 were accidental, while 273 were intentional.

The sources from which this gas is received are numerous. Among suicides, perhaps the commonest is the inhalation of illuminating gas. All of us have noted where death or unconsciousness has resulted from either turning the gas on, in a closed room or inhaling it directly from connecting tubes. Ohio reports 66 per cent of its deaths from asphyxia from illuminating gas, and 10 per cent from auto exhaust. The carbon monoxide content in illuminating gas varies from 30 to 35 per cent, and from one to 17 per cent in gas from coal stoves, furnaces, and gas burners. The danger from auto exhaust is a much greater one than is usually realized. Again quoting Erb, who has studied this exhaustively, we find that the average auto will discharge one cubic foot of carbon monoxide per minute. In less than two minutes in the usual one-car garage the saturation becomes dangerous to health. In five minutes unconsciousness is produced, and in less than 10 minutes the saturation may have become so great that death itself ensues. In the home the chief source of danger comes

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from leaky furnaces where improper flue connections exist, or in the coal stoves where coal gases containing large percentages of carbon monoxide are formed and escaped into the upper rooms. In recent years a still greater danger has been installed in many homes. I refer to the new type of gas stoves which are sold to consume all the gas, and are for that reason, either made without flues or the flues are dispensed with as being unnecessary. In my experience they have proven the greater source of danger of them all.

The properties of carbon monoxide are such as to make it particularly hard to recognize. It is colorless, tasteless, and practically odorless. It is also without irritating action upon the mucous membrane of the respiratory tract; hence the victim may be inhaling this poison in greater or less degree, without being aware of it until extreme headache warns him of his danger, or the saturation may be so great that the patient falls unconscious without ever knowing of his danger, or making any effort to save himself.

Symptoms:—These may be many and severe, or few and slight, all depending on the percentage of carbon monoxide present in the inhaled gas. The usual symptoms first noted are drowsiness, then coma, and if not removed from the presence of the gas, death. In those cases not reaching the stage of unconsciousness, or upon being revived quickly, they speak of a severe headache, throbbing in the temples, weakness of the body, and most especially in the knees. The headache is often spoken of as being vise like, about the temples, and is due to an increased intra-cranial pressure. This pressure comes from a cerebral congestion with an increase of cerebro-spinal fluid. These headaches last for several days and may or may not be accompanied by nausea, or nausea with vomiting. There may be paralysis of the extremities, with oedema of the soft parts which is later followed by sloughing over the areas of pressure, such as the buttocks, heels, etc. There may be peripheral neuritis, poliomyelitis, encephalic meningitis hemorrhages in the brain, and later softening of the brain. This softening is most noticeable in the leptomeninges. The hemorrhages are not limited to the brain alone, but may occur in any organ, such as stomach, kidneys, liver, larynx, bladder, etc. Robinwitz of Brooklyn, noted purpuric spots on the skin, which later broke down. This was

especially interesting to me since he is the only writer who calls attention to this condition, yet it was present in one of the cases I am reporting. In the chronic type of poisoning there may be only mild symptoms such as lack of energy, indisposition to work, palpitation of heart, shortness of breath, and a mild headache, with or without gastric symptoms. There may also be tingling in the hands and feet associated with the above mentioned lassitude.

Postmortem Findings:—The body may be bright red, or may be pink with splotches of red scattered over it. The blood is cherry red and very fluid. There is congestion and oedema of the lungs. There may also be petechial hemorrhages scattered throughout the entire system, and especially in the brain, with an associated softening of the brain if the condition has lasted long enough.

Method of action of carbon monoxide: This gas possesses a particular and peculiar affinity for hemoglobin. This affinity being three hundred times greater than oxygen's affinity for hemoglobin. Since the function of hemoglobin is to carry oxygen to the tissues, it is readily seen that where carbon monoxide exists in the air the oxygen carrying capacity of the hemoglobin is seriously interfered with. Not only is there present the affinity just noted, but the combination made between the carbon monoxide and the hemoglobin, namely carbonmono-hemoglobin is much more stable than that existing between the oxygen and hemoglobin so that there exists internally a condition which amounts to asphyxia, and those organs possessing the richest blood supplies naturally suffers first and most severely, namely the central peripheral nervous systems, the heart and the brain; due to their impoverishment.

Treatment:—This is divided into prevention and curative. Under the heading of prevention may be listed as follows:

First—Test all flue connections in fall before starting furnace.

Second—Rubber connection tubes should not be attached to gas stoves.

Third—No gas stove should be used without flue connections.

Fourth—One should never sleep in a gas heated room without being sure of the circulation of fresh air.

Fifth—One should not run a motor to

warm it up in the garage without having the garage doors open.

Sixth—The motor should not be allowed to run while the car is parked and closed.

In those cases already poisoned the first care is to remove them from the presence of the gas. The use of the lung motor is of doubtful value, since the danger to the system has already occurred. The inhalation of an oxygen and carbon-dioxide mixture has been thought to be more beneficial than the use of oxygen alone. After the patient has been removed to fresh air, your attention should be devoted to meeting such symptoms as may arise, as for example, cardiac embarrassment, and the after care of the sloughing areas. In those individuals where paralysis occurs, little can be done, though cases have been reported where regeneration of the nerve tracts has taken place. Where the headache is severe analgesic preparations are indicated and may have to be continued over a period of several days. Where the stupor is deep and lasting, hypertonic saline solution intravenously will often relieve conditions and aid markedly in restoring the patient to consciousness.

Report of cases:—Dr. John Lee, aged about 55 years, returned to his office early one morning and sat down in front of a lighted gas stove, presumably falling asleep. Some four to six hours later he was discovered by his wife in a markedly unconscious condition, deep stertorous breathing, and his head thrown back on his chair. At the time of discovery the room was noticed to be full of incompletely combusted gas. The patient was removed to his home and later about five P.M. was brought to the hospital. On arriving at the hospital, he was in a semi-conscious condition, answered questions vaguely and was uncertain both as to his movements and his whereabouts. At this time there had already developed an enormous oedema of the back of the neck, extending well down over the back. There was also a large oedematous spot over the right buttock with some BBB formation occurring in both areas later. A moderate sized BBB occurred on top of the left foot and underwent slight sloughing. During the patient's more lucid moments he complained bitterly of his extreme pain in the odematous areas, and opiates were necessary to relieve him. Temperature varied, the most of the time was elevated. After several days the patient had im-

proved, and insisted on returning to his home. At this time the oedema had improved, though the superficial sloughs were still not entirely healed. The mental condition was also improving, though at times the patient was not entirely clear as to the passage of events. On his return to his home I lost immediate touch with the case, since he lived some twenty miles from Muskogee, and I have only history for the following. After reaching home he continued to improve slowly and was able to be down to his office once or twice, though never actively resuming his work. Some ten days or two weeks after leaving the hospital, he began to get worse, mental dullness returned, and a condition of brain softening set in. This was followed very shortly by coma and death.

Case 2—Miss W., aged 28 years, was entertaining a man guest from out of the city. As the weather was cold they sat before a flueless gas stove, upon a couch. About eleven P.M. the young lady passed through her mother's room to secure a drink of water. At this time she said she was sending her guest home ^{early}, as she found she was not feeling well, having a headache and general lassitude. The mother had already retired and fell asleep. At two A.M. she awakened to find the two young people unconscious upon the couch, each slumped down and huddled up. The alarm was sounded and the girl carried to her room and put to bed. When I reached the house some 30 minutes later, the man was recovering, but still in a dazed condition. He was also suffering from slight nausea, though there was no vomiting. The girl was still rather profoundly unconscious. Circulation, color, and respiration were all good, and there seemed no immediate danger. The following morning the boy was able to be up and about though still very weak. The girl had recovered consciousness but suffered severe headache to such a degree that analgesics were required to control it. Her exhaustion was so extreme that it was several days before she was able to be out of bed, and about eight days before she had recovered sufficiently to resume her work. Complete recovery did not take place for several weeks.

Conclusions: *First*—Poisoning by carbon monoxide is increasing.

Second—The danger is largely preventable.

...Third—Not enough publicity concerning this danger has been given to the laity.

Fourth—Little can be expected from remedial methods once the patient has developed the poisoning. He lives or dies, dependent on the amount of gas he has already taken into his system.

THE BROADER VIEWPOINT OF ARTHRITIS*

WM. H. BAILEY, M.D.,
OKLAHOMA CITY

A joint may be defined as the articular surfaces of two adjoining bones, which are covered by hyaline cartilage and surrounded by a synovial membrane and ligaments. In order to better understand the results of diseased or abnormal conditions in joints, it is essential that we have a working knowledge of the anatomical construction of a typical joint. Strictly speaking, only those structures enclosed within the synovial membrane should be considered as within the joint. The ligaments, then, must be considered as peri-articular tissues along with the muscles, tendons, blood vessels, nerves and skin, that lie in close proximity to the joint. In some joints the epiphyseal line is distal to the attachment of the synovial membrane, so that, in those instances, the end of the diaphysis must be included as within the joint and therefore a part of it.

It is quite easy to understand how a junction between two bones that do not move on each other or between which the movement is very little would be likely to have a little different construction from that which lay between freely movable bones.

An immovable articulation is not strictly speaking a joint, as it does not possess a synovial membrane and has no joint cavity. The ends of the bones are joined together directly by a narrow web of fibrous tissue or a thin band of fibro-cartilage. Such a construction is found in the articulations between the bones of the skull.

The junction between the epiphysis and shaft of a long bone is placed in this class, until the time that the growth stops and bony union takes place. In this instance,

there is this difference however, the cartilage is hyaline rather than the usual fibro-cartilage found in a synarthrosis.

A true diarthrosis or movable joint has the ends of the bones covered by a thin layer of hyaline cartilage, (the articular cartilage) and there is a definite joint cavity lined with a synovial membrane. There may or may not be in addition, disks of intra-articular fibro-cartilage which assist in filling in between the rounded ends of the bony surfaces or in deepening the cavity of a fossa in which the head of the bone rests.

Between these two types there is a mixed group, which joints represent different gradations in construction, as well as in movement, between the immovable articulations and the true joints.

Whether a joint is a hinge-joint or a ball and socket joint does not make any difference in its fundamental construction. The degree or extent of its motion is the factor that has the most influence on its make-up.

The articular cartilage of a joint has an unusual histological construction. It has no capillaries in its central or articular portion. The lateral area of an articular cartilage is covered by a thin perichondrium which is continuous with the synovial membrane and contains small capillaries. The nourishment of an articular cartilage is thought to be derived from three sources; (1) the sub-articular surface of the bone, (an absorption from the blood vessels of the epiphysis); (2) the circulus vasculosus, (that net-work of blood vessels running around the cartilage at its junction with the synovial membrane); and (3) the synovial fluid, (an absorption).

The lessened blood supply of the articular cartilage probably accounts for the characteristics noted in its pathology, as the results of injury or disease. It has feeble powers of resistance, it readily degenerates, and it is extremely slow to repair. These characteristics are more marked as we go towards the central portions of the cartilage. The tendency to an over-growth of the lateral portions, with the formation of a "lipping," may be considered as a compensatory hypertrophy of the better nourished lateral portions to take the place of the very slow regeneration of the central part of the articular cartilage.

The synovial membrane is lined with an endothelial layer in the parts that are at

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a distance from the articular cartilage, close to the cartilaginous attachment this endothelium is very deficient. In this deficient area are numerous mucin cells which can easily discharge their contents into the joint cavity. Absorption of excessive synovial fluid or other material from the joint cavity takes place mostly through the lymphatics in the synovial membrane and the capillaries of the *circulus vasculosus*, around the edges of the articular cartilage.

The great majority of infections reach the joint cavity through the blood stream. Some, of course, are introduced into the joint by puncture wounds entering the cavity or by direct extension from disease of the adjoining bone or peri-articular soft structures.

The classification of diseased conditions of joints has always been and still is, very much confused. This is partly due to the fact that some authors use the etiology as the basis of their classification, others use a clinical classification and still others use an anatomical nomenclature. The picture is still more confused by the fact that the same etiological factor, as for instance, tuberculosis, may in different instances, appear in very different forms and types. Also, the infection of one joint by a definite organism and of a second joint by an entirely different organism, may give rise to identical tissue changes.

As in disease in any other organ of the body, we must not lose sight of the fact that repair may set in at any stage of its development and that the end result in each instance is necessarily going to be dependent on the factors present at the time that progress of the disease stops and repair begins.

Any diseased condition that has a multiple etiology usually has a confused classification, as well as a vast number of treatments or "cures." And what condition has had more "cures" recommended than rheumatism, especially chronic rheumatism. The so-called "cures" quite frequently slop-over out of the profession and get into the hands of quacks. So that it would behoove us to give some thought to this interesting but difficult class of cases and encourage the research work in this field, as much as possible.

The infectious or bacteriological cause for arthritis although very definite and positive in many cases is not the whole story. The importance of a focus of in-

fection, teeth, tonsils, sinus or wherever it may be located, has been definitely proved. But you have all seen cases in which the removal of this focus has not been associated with improvement because the joint itself has become a secondary focus which is able to "carry on" by itself.

Recent study in this subject has developed the thought that possibly these foci of infections are simply activating or perpetuating causes and not the original or underlying cause in many instances.

Investigation has shown that there is a definite retardation of blood flow in these arthritic joints. Whether the cause of this is local or systemic has not been proved. Pemberton of Philadelphia has found that 20 per cent showed a metabolic rate which was low, while 60 per cent showed a lowered glucose tolerance.

The work of Snyder in New York adds to this idea. His colonic irrigations are not to be thought of as removing some focus of infection. He proposes by this means to prevent the absorption of some intestinal toxin which has been developed by a disturbed physiology of the digestive tract.

Magnuson of Chicago, has stated that thorough and careful examination in a certain class of arthritis cases will show a great reduction of hydrochloric acid in the gastric juice, indican increased in the urine and the bowel action not quite normal. In a series of 100 selected cases, 56 per cent showed an increase in the uric acid content in the blood; 34 per cent showed an increase in the blood urea, and 57.5 per cent gave an increase in the blood non-protein nitrogen.

Disfunction of the endocrine system is now recognized as having its joint manifestations in many instances.

Data of this nature would go to show that the condition of arthritis might possibly be thought of as simply a joint expression of a systemic general disturbed physiology.

From a therapeutic side we have many points that add to this recent view-point of the etiology of joint conditions. The cause for the failure of treating all cases by any certain method is that the majority of treatments or "cures" are aimed at one single cause of arthritis. In the light of the recent development in the etiology of joint disease we feel pretty certain that there are many different causes of

arthritis. Reviewing the more recent therapeutic measures recommended for one type of arthritis or another we are struck by the number directed towards the restoration of the body to a normal physiological state.

Physio-therapy, including its various forms of applying heat, massage, exercise. The low caloric or low protein diet, the various methods of increasing elimination by the bowels, kidneys and skin; colonic irrigations, mineral waters, baths; the re-adjustment of the body to a normal environment, adequate rest, pleasant surroundings; removal of mental worry. Deformities are to be corrected so that joints may at least approach their normal anatomical form.

Still very important, we must of course, remove all foci of infection. Along with this we have autogenous vaccines and non-specific protein therapy. Also we must not neglect the medicinal aids in the way of tonics and vaso-dilators.

This then, is the broader view point of arthritis. In many cases, perhaps the majority of cases, it is to be considered as simply a joint expression of a disturbed body metabolism, a local manifestation of a general systemic deranged physiology.

POSTOPERATIVE MASSIVE COLLAPSE OF THE LUNG*

D. L. GARRETT, M.D.,
TULSA

Pulmonary complications occur often enough after operations to warrant the most careful consideration of the surgeon. Until a date quite recent, these complications have usually been considered under the classification of bronchitis, pneumonia, embolism and abscess. In later years, it is probably true that a clearer recognition of pulmonary embolism has reduced the number of cases of pneumonia. There is another condition which we wish to study briefly today, which in general has not been awarded the importance it deserves. This paper is based upon a survey of available recent literature and personal observation of one case. There is no claim made for originality in any of the ideas or theories hereinafter presented, and quotations are taken liberally

from various authors. A list of articles consulted will be appended.

Massive collapse of the lung may be defined as an airless condition of the greater portion of a lobe or lobes, giving rise to the signs of consolidation, with displacement of the heart and mediastinum toward the affected side, presenting symptoms of cyanosis, cough, fever and dyspnoea. It may follow operations or injuries involving any part of the thorax, abdomen or buttocks. Wm. Pasteur, an English surgeon, was the first to recognize this condition as a clinical entity. In 1890, he reported 34 cases of massive collapse of the base of the lungs occurring in the course of diphtheritic paralysis of the diaphragm. Eighteen years later he noted the condition at autopsy in patients dying from peritonitis following operation. In 1910, the first case was recognized clinically. In 1925, Scott of Boston was able to present a review of 68 cases, including four of his own. A peculiar feature of the history of massive collapse of the lung is that the work of Pasteur received no general recognition. The condition was forgotten until the extraordinary and unusual features of numerous war-wounds of the chest commanded attention. John Rose Bradford made a special study of the condition and re-discovered the work of Pasteur. Bradford also wrote the article on massive collapse for the "Oxford Medicine," the only standard work on medicine or surgery, which treats the condition as a post-operative complication. What has been written is, with that exception, to be found only in journals. Another interesting item is that a few observers have reported all the cases. Once the condition has been recognized in a given clinic, more cases have soon been discovered. It is probable that the majority of cases of massive collapse have been diagnosed as pneumonia.

The onset varies from a few hours to several days after operation or injury. There is most often a progressive development of the symptoms requiring several hours to develop the maximum intensity. In some cases the onset is very sudden. Cyanosis of some degree is an early and frequent symptom. Cough with difficulty in expectorating a thick yellowish tenacious sputum is soon noted. Dyspnoea is manifest and becomes more and more intense, particularly upon exertion, such as turning from side to back or vice versa. The temperature rises, ranging from 101

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to 104 F. The pulse increases in rapidity. Pronounced sweating was a marked feature of the single case, I have observed. The hands and forehead were constantly moist until the general symptoms began to abate.

The physical signs are most striking. The patient lies upon the affected side, but if placed supine, inspection reveals the collapsed side to be immobile, fixed rigid; the ribs are closer together than normal and the chest wall resembles the collapsed thorax of a long-standing tuberculosis. The opposite side of the chest is expanded, pumping in and out like a bellows. Percussion reveals most pronounced dullness over the entire lung of the affected side, while the opposite side is hyperresonant. Auscultation discloses either of two sets of signs. Rales are very few in both varieties. The breath sounds may be faint, suppressed and distant, or there may be marked bronchial breathing, with bronchophony and pectoriloquy. The heart is displaced very noticeably toward the collapsed side and is the most characteristic single finding.

The X-ray reveals the heart and mediastinum displaced toward the collapsed side, increased density of the involved portion of the lung, high position of the diaphragm, and approximation of the ribs.

The duration is usually four or five days, but may be ten days. The termination is usually by lysis, but may be by crisis, after a severe attack of coughing. The prognosis is good. The uncomplicated cases all get well. Fatal termination occurs only in cases complicated by superimposed pneumonia.

Ritvo describes the pathology as follows: The involved portion of the lung is blue or violet in color and sharply demarcated from the normal tissue. It is soft, tough and wet; it feels heavy, does not crepitate, and sinks when placed in water. Microscopically, the alveolar spaces are closely approximated, the alveolar spaces being obliterated.

The mechanism of the development of massive collapse has not yet been satisfactorily determined. Lichtheim in 1878 demonstrated that if a bronchus was plugged experimentally that absorption of the imprisoned air took place within a few hours and the lung collapsed. In 1890, Pasteur dealing primarily with post-diphtheritic paralysis of the diaphragm concluded that paralysis of the

diaphragm or other parts of the chest wall tends to induce loss of function of the adjacent lung. In a later paper, he stated more definitely his belief that paralysis of the diaphragm lasting over a period of 48 hours leads to a collapse of the lung.

John Rose Bradford in 1918-1919, states that "spasm of the bronchioles would probably be a sufficient explanation of the condition, if we could surmise how it could be brought into action." But he concluded that immobility and retraction of the chest wall and diaphragm more readily explain the condition. Elliott and Dingley in 1914 advanced the theory that the collapse was due to blocking of the bronchioles by mucus and subsequent absorption of the air in the alveoli.

Scrimger, basing his statement upon certain experimental work of Carlson, suggests that there is a nerve control of the air sacs and finer bronchioles through the vagus and that the lung may be made to contract by peripheral reflex stimulation of the vagus. Hence, the mechanism would be contraction of the bronchioles or their obstruction by outpouring of secretion, followed by the absorption of the alveolar air, reduction of the intrapleural pressure on the affected side, with consequent shrinking of that half of the chest in all its diameters. There is practically no treatment and fortunately none is needed. Morphine seems to make the patient more comfortable. Adrenalin and atropin aggravate the condition and increase the discomfort.

Report of case:—O. J. Mc., oil operator. Family history unimportant and past history unimportant. The present illness began 12 weeks prior to admission to hospital, with jaundice, clay colored stools and a mild degree of pain in the right hypochondrium. After ten days or two weeks the jaundice subsided. The patient continued to have gaseous distress in the epigastrium after the evening meal. Gastro-intestinal examination with the X-ray revealed a chronic appendicitis with a doubtful Graham test. Urinary examination was negative. The physical examination revealed nothing noteworthy except a constant point of tenderness over the point just below the tip of the tenth right costal cartilage. Blood examination, including Wassermann, was negative. Upon this history and these findings a diagnosis of chronic gall-bladder disease and chronic appendicitis was made. Chole-

cystectomy and appendectomy were done on March 30, 1927. The gall-bladder was thickened and contained one small rough non-faceted stone. The appendix was small, white and apparently fibrous. The right lower margin of the liver was adherent to the hepatic flexure of the colon. This adhesion was separated. Cigarette drainage was placed in the fossa of the gall-bladder and the wound closed.

The patient remained quiet, complaining of moderate abdominal pain. The pulse which at the close of the operation was 84, had risen at 9:30 P.M. to 118. The following morning the patient was uncomfortable, the fingers were cyanotic, perspiration was profuse. The right lung was dull throughout. At this time pneumonia was suspected. At 7:30 P.M. there was dullness over the entire right lung, no rales were heard, the breath sounds were distant and faint, the right side of the chest was immobile and there was exaggerated movement of the left side of the chest. Massive collapse was now considered and an X-ray examination of the chest made the following morning. This revealed great increase in density of the right lung, high position of the diaphragm of the right side and the heart and mediastinal structures drawn to the right side. This, of course rendered positive the diagnosis of massive collapse of the right lung. The patient continued very ill for four days, during which time his pulse rose to 144 and the temperature to 104 F. On the fourth post-operative day, he gradually became better and the temperature became normal. But on the seventh day, the sutures were absorbed and the wound came open. The omentum protruded from the wound and the patient became quite ill for the second time. The wound was closed as well as possible with through and through sutures of silkworm, aided by several packs of gauze. This was done in bed in the patient's room under local anaesthesia. The wound healed nicely after this procedure and the patient is up and about at the present time without a hernia.

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BOOK REVIEWS

1926 COLLECTED PAPERS OF THE MAYO CLINIC AND THE MAYO FOUNDATION, Rochester, Minnesota. Octavo of 1329 pages, with 386 illustrations. Philadelphia and London: W. B. Saunders Company, 1927. Cloth, \$13.00 net.

The Publication Committee of the Mayo Foundation state that the material for this volume has been selected to meet the interest of the general surgeon and diagnostician. Papers of interest in the more limited fields have been abridged, abstracted, or referred to by title only. It is suggested that the original publications, in these cases, be consulted.

This volume, as has its predecessors, contains the last word in varied medical and surgical problems as met and disposed of at the Mayo Clinic. Space does not permit, even, a rough outline of the variety of intensely interesting and very practical matters disposed of. One of the striking features of the work is a tribute to Russell D. Carman, who for many years has been the guide of all Roentgenological work at the Clinic as well as one of our national leaders and guides in that important branch of medicine. Dr. Carman, himself developed cancer of the stomach and has passed to the Great Beyond.

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Horlick's Milk Modifier, a new product made by the Horlick's Malted Milk Corporation, Racine, Wisconsin, is now being introduced to the medical profession. This maltose and dextrin product, which is derived exclusively from malted grains, was first announced at the annual meeting of the American Medical Association in Washington, D. C., in June, and created much interest. Since that time it has been presented to convention gatherings in other parts of the country, and the Horlick representatives are now calling on individual members of the profession.

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In the June 18th issue of the *Journal of the American Medical Association*, under the heading of New and Non-official Remedies, the acceptance of the Horlick Milk Modifier was announced by the American Medical Association. The product differs from the malt sugar in that it incorporates soluble and readily assimilates protein and valuable mineral salts from the grains. The Horlick firm points out this fact as a decided advantage for its product.

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EDITORIAL

HEART DISEASE

A Few Jottings

The more modern classifications of heart disease and the advancing knowledge of recent years, make for easier diagnoses and for more rational treatment. The larger percentage of human beings who complain of heart symptoms have no disease of the heart. Heart disease must therefore be better understood and correctly recognized if that case who has imaginary heart disease is to be kept from the ranks of the cardiacs.

Much can be done for the man with heart disease. If the advice of the competent man be followed life can be made happier and easier, and life can be prolonged. And, except for the acute case, drugs figure very little in the treatment. It is certain that most cases receiving digitalis would do just as well or better without the drug, the indications for digitalis being well defined.

What is this disease called "bilious?" Assurance is had that it is frequently the symptoms of a refractory heart. The term should be placed in the discard. Inability to lie on the left side is a symptom of heart disease, seldom if ever mentioned in the literature, and yet it is a frequent complaint. Perhaps the heart labors somewhat in that position.

What has happened to the "tobacco heart?" It is never seen. True it is though that the neuro-circulatory asthenic represents it. The statement is made that tobacco has not increased the number of irritable hearts in the female. It will be interesting to note in future years whether the ratio of diseases has been distributed in the male and female through the taking on of spirituous liquors and tobacco by the female.

The heart does not work all the time. In its diastole it is resting. Figures on the amount of rest secured by the heart during an average life-time, are to be had.

Too many mistakes are made in the diagnosis of heart disease.—F. G. D.

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Editorial Notes—Personal and General

DR. J. E. CHILDERS, and family, Tipton, visited in Mississippi in August.

DR. C. DOLER, Foss, is taking special courses on the heart, Washington University, St. Louis.

DR. J. A. CHILDS, Tulsa, who recently suffered from eye infection, is reported as improved.

DR. C. M. POUNDERS, Oklahoma City, has been named to represent the Board of Education on the City Health Board.

DR. R. M. HOWARD, Oklahoma City, is studying in Vienna. He will also visit the International Goitre Association at Berne.

DR. and MRS. L. A. MITCHELL, Stillwater, visited various colleges and infirmaries in Kansas, Missouri, Nebraska and Iowa, in August.

DR. HUGH C. GRAHAM, formerly of Chicago, announces his association with the Garbedian Clinic for Children, Tulsa.

DR. E. T. ALEXANDER, Barnsdall, visited in Kentucky in August.

DR. W. G. HUSBAND and family, Hollis, took a vacation in August in New Mexico.

DR. W. P. ROBINSON, Sapulpa, who has been ill for some time is reported as improved.

DR. and MRS. CARY W. TOWNSEND, Oklahoma City, spent the months of July and August at Hot Springs.

DR. C. B. and PAULINE BARKER, Guthrie, spent the summer in Vienna, doing special work, returning about September 15.

DR. G. E. JOHNSON, Ardmore, has returned from San Antonio where he attended the Medical Reserve Corps training camp.

DR. A. S. RISSER, Blackwell, visited in Vermont and other eastern states in August, attending various clinics. He did some operating at Randolph Sanitarium and addressed a Red Cross meeting at Woodstock.

OKLAHOMA HOSPITAL, Tulsa, has elected the following staff officers: Dr. Fred S. Clinton, Chief; J. F. Park, Assistant Chief, and T. H. Davis, Secretary. Executive Committee: J. C. Smith, J. F. Park, Walter A. Huber.

DR. R. M. SHEPARD, Talihina, Superintendent of the State Tuberculosis Sanitarium since it was organized, has tendered his resignation and will begin serving Valley View Sanitarium, Paterson, N. J., as Superintendent and Medical Director. January 1, 1928.

SOUTHEASTERN OKLAHOMA Medical Association, McAlester, elected the following officers: Dr. G. C. Gardner, President, Atoka; Dr. T. H. McCarley, Vice-President, McAlester, and Dr. John A. Haynie, Secretary-Treasurer, Durant. The next meeting will be held at Durant in December.

DOCTOR JOHN LOUIS JEFFRESS

Dr. John Louis Jeffress, Ada, was killed in an automobile accident near Fitzhugh, Oklahoma, August 23, 1927. Funeral services were conducted in the Methodist church at Roff, August 24.

Dr. Jeffress was born October 22, 1869, at Como, Texas. Both parents died when he was three years of age. He was raised by Dr. David Jeffress. He spent two years in the University of Louisville and graduated from Tulane University in 1895. He located in Como, where he remained until 1901, when he moved to Roff, Oklahoma. In 1921 he moved to Ada. He was president of the Pontotoc County Medical Society for the year 1926. Dr. Jeffress was held in high esteem by his fellow practitioners and his loss is deeply felt by them as well as hundreds of other friends in Southern Oklahoma.

DR. R. L. EDMONDS, Fargo, has located in Oklahoma City.

DR. and MRS. C. M. BLOSS, Okemah, are visiting in Colorado.

DR. R. KEYES, Okemah, visited in Denver and the Rockies in August.

EASTERN OKLAHOMA HOSPITAL, is constructing a new \$150,00 building.

DR. L. T. LANCASTER, Cherokee, has been re-appointed County Superintendent of health.

DR. L. J. MOORMAN, Oklahoma City, is on the Advisory Board of the City Health Department.

DR. and MRS. C. F. HOUSE, Walters, have returned from an extended trip through Nevada and New Mexico.

DR. W. T. SALMON, formerly of Oklahoma City, has moved to Duncan where he will join the Duncan Clinic.

DR. A. C. HIRSCHFELD, Oklahoma City, is attending clinics at Rochester, Chicago and other eastern points.

MRS. S. R. CUNNINGHAM, wife of Dr. S. R. Cunningham, Oklahoma City, died from cerebral hemorrhage August 26th. The pall bearers, active and honorary, were chosen from the professional friends of Dr. Cunningham. The Journal extends sympathy on the occasion of this great bereavement.

DOCTOR CHARLES E. HAYWARD

DR. C. E. Hayward, for many years a physician of Wagoner, died suddenly September 22, of heart disease. Dr. Hayward was a native of Illinois, born near Peoria 74 years ago. He moved to Wagoner in 1916, where he operated a small sanitarium up to one year ago. He is survived by his wife and two daughters. Temporary interment was made in Wagoner, but the body will later be taken to the old home at Tremont, Ill.

DOCTOR FRED F. JONES

Dr. Fred F. Jones, Pawhuska, died August 22. He was born at McArthur, Ohio, March, 1868, and was educated in the common school and graduated from the Medical Department of Columbian University, Washington, D. C., May, 1893. He made the run to the Cherokee strip and located at Perry in 1893, moving to Pawhuska in 1905. Dr. Jones was an ardent patriot, serving during the World War. He was an enthusiastic Mason, being Past Master of the Pawhuska lodge, which had charge of the funeral. Burial was made at Pawhuska.

DR. S. DePORTE, Ardmore, has been elected County Secretary of Carter County, succeeding Dr. A. G. Cowles.

DR. JABEZ N. JACKSON, president of the American Medical Association, will be the guest of honor of the Oklahoma Hospital, Tulsa, September 24th. A number of out of town guests have been invited to meet him.

DR. LEA A. RIELY, Oklahoma City, has returned from his "lunch counter" education. He has been in France attending hospitals in the morning and seeing the sights with his family in the afternoons and evenings. His family will not return until October 1st.

DR. J. A. MUNN, McAlester, has been appointed physician at the State Penitentiary, Dr. J. W. Echols resigned. Dr. Echols has served continuously in this capacity for more than sixteen years, taking charge of the prison hospital when it was a small frame building, and has seen the evolution of that into a splendid modern hospital. He will resume private practice in McAlester.

DR. J. A. KENNEDY, Okemah, was injured at Yellowstone Park in a most unusual manner. While fishing in one of the lakes and reeling in a fish, he accidentally stepped backward and stumbled in one of the hot springs. He was seriously burned and for a time his life despaired of. He is reported as slowly improving though his condition is still critical.

ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M. D.
717 North Robinson St., Oklahoma City

DISLOCATION OF THE OUTER END OF THE CLAVICLE.—John Dunlap, Calif. and West. Med., xxvi, 38, Jan., 1927.

This dislocation is usually caused by a force which depresses the acromion process at the point of the shoulder. This force may be direct or it may come indirectly from a sudden rotation of the scapula. It can not occur without extensive tearing of most of the ligaments around the acromioclavicular joint and it follows that proper treatment should include repairs of these tears.

It has been suggested that the bones be sutured together at the joint and also that arthrodesis be done. However, the author does a more anatomic repair by suturing the ruptured ligaments. Chief among these is the coracoclavicular ligament which holds the outer end of the clavicle down. This ligament was sutured and reinforced by whatever neighboring tissue was available. This method differs from that of Watkins in that no extraneous ligatures are introduced. The cases in which it has been done have been so far successful.

REPORT OF THREE CASES OF INJURY TO THE RIGHT KNEE.—Geo. M. White, Canadian Med. Assn. J., xvii, 334, Mar., 1927.

The author reports three case of injury to the extensor apparatus of the knee, operated upon by him in the Royal Victoria Hospital, Montreal, in a period of six months, about a year ago. There was one case of fracture of the patella, one of torn patellar ligaments, and one of torn quadriceps

tendon. In each case it was the right knee that was affected. All the patients were in the seventh decade. In each case there was, as a result of accident, sudden ability to stand or to extend the knee, which persisted until after recovery from operation. The diagnoses were made on the physical and x-ray findings. In each case, the torn structures were sutured with chronic catgut, passed through holes drilled in the patella, and immobilized in plaster or splints in the extended position. The results were excellent.

RECONSTRUCTION OPERATION ON THE HIP.—J. S. Speed, J. Am. Med. Assn., lxxxvii, 1631, 1926.

The indication for such procedure is discussed with illustrations.

1. Congenital dislocations. With a shallow cavity the ring of the acetabulum may be deepened by turning down a portion of the ilium in older children. In adults a shelf of bone may be turned down over the head, or a new cavity formed at a higher level.

2. Paralytic dislocations. The method devised by Dr. Campbell has proven satisfactory in fifteen cases. A large curved wood chisel is driven one centimeter above the acetabulum rim, and the mass fractured down. Additional bone from the ilium falls in the gap and a broader shelf for support is therefore obtained.

3. Ununited fractures of the neck of femurs. Indicated when marked atrophy of the head and absorption of the neck has occurred, also in extreme shortening and when patients' economic condition requires rapid convalescence and stable hip.

Seven hips are reported as operated on by the different methods, and preference is given the Whitman technique.

EYE, EAR, NOSE and THROAT

Edited by Jas. C. Braswell, M. D.
726 Mayo Bldg., Tulsa

ENUCLEATION OF THE EYEBALL WITH THE IMPLANTATION OF ENDOGENOUS CARTILAGE.—Bagley, C. H., Am. J., Ophth., 1926, 3s, ix, 873.

Since sympathetic ophthalmia has occurred after failure to remove all of the sclera in an enucleation, all methods of exenteration are condemned. A good cosmetic result may be obtained by the implantation of autogenous cartilage in Tenon's capsule.

After ordinary surgical preparation, a vertical incision is made over the sixth rib 5 cm. to the right of the midline. The insertion of the rectus muscle is split, exposing the fused cartilage of the fifth, sixth, and seventh ribs. The sixth and the anterior perichondrium are removed, the posterior layer being left to allow future regeneration. The usual enucleation is done, sutures being attached to the recti muscles during the operation.

After all bleeding has been checked by hot solutions or adrenalin, a graft composed of several layers of cartilage, secured by fine catgut and about three fifths as large as the globe, is placed in Tenon's capsule. Tenon's capsule is closed with a purse string catgut suture, and three sutures of the same material are employed to close the sub-conjunctival tissues. The conjunctive is carefully opposed to prevent infolding

and is closed with a horizontal row of interrupted silk sutures.

No blood matching is necessary, the cosmetic result is good and permanent, sympathetic ophthalmia is eliminated, and there is little post-operative reaction.

TUBERCULOSIS IRIDOCYCLITIS AS OBSERVED WITH THE SLIT LAMP. WITH REMARKS ON TUBERCULIN TREATMENT.

—King, C., *Arch. Ophth.*, 1926, *lv*, 563.

King states that for some time there will probably be a discussion as to the use of tuberculin as a diagnostic and therapeutic agent. In his opinion, however, it is hardly possible that the slit lamp will be of much aid in the argument when, in the present state of our knowledge, the clinical appearance of tuberculosis as revealed by it is identical with that of lues and sympathetic inflammation. After all, we are dependent in the differential diagnosis of chronic iridocyclitis upon the history, the general and local clinical findings, and the findings of well-established laboratory tests.

In conclusion King says that to those who have seen the general physical and laboratory examination made by German ophthalmologists in cases of ocular inflammation it is not surprising that they discover tuberculosis in such a high percentage. German ophthalmologists have made good use of tuberculin but, like some American ophthalmologists, have not sufficiently realized the importance of focal infection or coincident infections.

TUTOCAINE: A LOCAL ANAESTHETIC IN RHINOLARYNGOLOGY —Cunningham, O. D.

—*Laryngoscope*, 1926, *xxxvi*, 837.

The author discusses the merits and defects of tutocaine as a local anaesthetic from the laboratory and clinical standpoints.

In experiments on animals, tutocaine was found to be 4.5 times less toxic than cocaine, 2.7 times more toxic than novocain, and approximately three-fifths more powerful than cocaine for the induction of surface anaesthesia. Its toxic symptoms are essentially those of cocaine and novocain.

In clinical use it was found that for the removal of tonsils, a 5 per cent solution in 1:10,000 adrenalin is a satisfactory substitute for 10 per cent cocaine for surface anaesthesia and 1-5 per cent solution is a satisfactory substitute for 0.5 per cent novocain for infiltration. For most intranasal operations a 5 per cent solution in 1:10,000 adrenalin is a satisfactory substitute for flake cocaine and adrenalin. For submucous resection tutocaine is less satisfactory than cocaine flakes and adrenalin.

It is somewhat slower than cocaine and novocain in producing equivalent anaesthesia. It is superior to cocaine in its relative freedom from toxic by-effects.

THE LOCAL ADMINISTRATION OF BACTERIAL VACCINES IN THE TREATMENT OF SUBACUTE AND CHRONIC NASAL SINUS CONDITIONS.—Hays, H., *Laryngoscope*, 1926, *xxxvi*, 812.

In the treatment of subacute and chronic paranasal sinus infection the author applies an autogenous vaccine to the nasal mucous membrane and injects it into the antra.

The patient receives, in all, eight office treatments given at intervals of three or four days. In the interim he uses the vaccine at home twice daily in the form of a nasal spray.

Of sixty-nine patients treated in this manner, twenty-three were cured, thirty-eight were benefited, and eight were not benefited.

A PATIENT WHO UNDERWENT TOTAL LARYNGECTOMY TWO YEARS AGO AND HAS SINCE ACQUIRED A USEFUL VOICE.

—Guthrie, D., *Proc. Roy. Soc. Med.*, *Lond.*, 1926, *xix*, *Sect. Laryngol.*, 65.

The author reports an unusual case of total laryngectomy in a previous healthy man aged 35 years who was gassed during the war. For two years the patient had had an increasing hoarseness and for seven months an increasing dyspnoea which became worse when he lay down. Laryngoscopic examination showed a swelling of the left ventricular band and in the left arytenoid region. Two weeks before the laryngectomy an emergency tracheotomy became necessary. A diagnosis of epithelioma having been made on the basis of a piece of tissue removed, a total laryngectomy was done July 21, 1924. The patient made a prompt recovery and when seen again four months later was working daily and had a good pharyngeal voice.

In the discussion following this report it was brought out that the patient's voice is best during attacks of indigestion and depends upon contraction of the abdominal muscles. In the cases of patients who cannot swallow air, it is sometimes necessary, for the production of a voice, to give an alkali followed by citric acid.

Two other cases were reported. In one, in which the laryngectomy was performed eight years ago, the voice which developed subsequently could be heard throughout a large hall.

The author believes that his patient does not swallow air consciously, but that the voice is produced by dilation of the oesophagus. The voice was recovered one month after the operation and since then has been gradually improving.

TUBERCULOSIS

Edited by L. J. Moorman, M.D.
912 Medical Arts Bldg., Oklahoma City

The Basal Metabolism in Pulmonary Tuberculosis.

—Benjamin L. Brock and Charles H. Haskins, *The American Review of Tuberculosis*, July, 1927.

After a study of the basal metabolism of a group of tuberculosis patients who were first exposed to normal conditions indoors, then to those outdoors both in summer and in winter, it was learned that the basal metabolism rate of tuberculosis patients may be normal or below normal; that prolonged inactivity and undernourishment tend to lower the rate; that exposure to outdoor air in winter causes a quick rise in metabolism with a latter fall, while in summer being out of doors causes a gradual rise in this rate. It appears that no extra work is thrown on the lungs of patients out of doors regardless of the temperature and that the mild stimulation is of positive benefit.

The Origin and Dissemination of Tuberculosis According to Recent Investigations.—F Neufeld, *The American Review of Tuberculosis*, July, 1927.

Recent experiments infecting guinea pigs and rabbits not only with tuberculosis, but with highly virulent streptococci and pneumococci, anthrax, swine-erysipelas, chicken cholera and mouse typhoid by inhalation, feeding, nasal and conjunctival instillation and rubbing the bacteria into the skin showed that all these bacteria give different results administered in these ways than when injected subcutaneously or intraperitoneally. Many more tubercle bacilli are necessary to infect an animal by feeding than are necessary to infect it by inhalation and a different type of disease develops in each case. One single bacillus produced acutely fatal infection by inhalation while large doses by feeding produced a slow, chronic disease which some times healed spontaneously. It seems therefore that the lungs are much more susceptible to tubercle bacilli than are the other mucus membranes, the latter seem to possess high natural resisting powers from the beginning while the former develop this power only after an infection. Infection by food seems to produce a milder course on an average than does infection through the lungs; it also produces a much weaker and shorter immunization. While children must be guarded from all forms of infection, direct infection through the lungs is the most important as it produces the severest form of disease. Since children are much more susceptible to this infection than adults are especial measures to protect them are necessary and are among the most important prophylactic measures. Apparently healthy children exposed to careful tuberculous parents or those not giving off many bacilli, who already give a positive pirquet reaction develop fewer cases of manifest disease with fewer deaths than do children with careless parents giving off large numbers of bacilli. Since the final issue of a tuberculous infection depends to a large extent upon the quantity of bacilli entering the body children must also be protected against repeated heavy doses of bacilli. Old inactive foci also become active again with a renewed infection. The segregation of the advanced tuberculous patient who expectorates large numbers of bacilli is, therefore, the most important prophylactic measure. If this is impossible his neighborhood must be safeguarded as well as possible not only against contamination from direct coughing but from particles of sputum and droplets scattered on the clothing, linen and so forth which soon dry and easily become suspended in the air. While infection by inhalation tends to produce graver disease than does infection by other routes the progress of the infection depends to a great extent on the individual constitution and capacity for the elaboration of specific protective forces. Individuals vary so in this that it must be considered one of the most important factors in the production of disease. Certain food elements seem to influence the constitutional disposition—just what these are is unknown at present but a scurvy producing diet has a bad influence on experimental tuberculosis in guinea pigs. Housing and working conditions also exercise great influence on this disease and must be taken into account in all prophylactic work.

Clinical Differences in Tuberculosis. — S. Lyle Cummins, *The American Review of Tuberculosis*, July, 1927.

Close study of the infinite and polymorphic forms of tuberculosis is necessary if it is ever to be controlled by public health authorities as are other bacterial diseases such as diphtheria. The various clinical manifestations must be recognized and the many factors of pathogenesis known and controlled. In studying this disease in experimental forms in laboratory animals it is soon learned that instead of being polymorphic as it is in human beings it is very uniform and different in type from that usually seen among humans. Further study shows however that this common experimental type closely resembles that seen in infants and in primitive races not previously exposed to the disease. It would seem therefore that the natural course of tuberculosis in primitive man and in susceptible animals is as uniform and as characteristic as that of any other bacterial disease. It is also evident that a new factor enters into the situation which tends to produce the common human type. Human tuberculosis may be divided in this way into two types, the "natural" and the "modified" form. The "natural" type which tends to appear when the initial infection is severe enough to produce disease is an acute generalized disease usually rapidly fatal—this is rarely seen except in laboratory animals, primitive adults and young children. "Modified" tuberculosis is largely localized in the lungs, has a long, slow course with frequent periods of relative good health. Its "prolonged survival period" is the chief source of infection in civilized communities. There are of course many mixed types of the disease; the common glandular disease of childhood is an instance of the "natural" type in its initial stage while disease of the bones and joints shows that there has been some generalization of the infection through the blood stream. Acute progressive forms of pulmonary tuberculosis show that while the "modifying" factor has been at work it has had very little effect. If this conception of the disease is correct "natural" tuberculosis will be seen in a civilized community only in the very young while the "modified" forms occur to an increasing extent as age advances. Racial and industrial groups are easily classified according to the type of tuberculosis prevalent among them—the Sengalese and other African natives tending to the "natural" type while nations of civilized countries with their large population and tendency to crowd into cities show the "mixed" types. Rural communities of Europe with little industry or crowding show a modified type of disease tending definitely to the "natural" form with the "young adult" type of mortality. The evidence points to the existence of some form of resistance to tuberculous infection present in varying degrees in the "modified" form and absent in the "natural" type since the former takes many forms while the latter is uniform in its course. While the nature of this resistance has long been studied from various standpoints it has not been thoroughly investigated in terms of clinical type. The two theories so far advanced as to the wide variations in tuberculosis mortality, that of hereditary predisposition and that of environmental adaptation conflict with each other and while either may account for the variation in mortality only the latter can satisfactorily account for the various clinical types seen since resistant types are found only in age and racial groups in which there has been enough time and

opportunity for environmental factors to take effect. If hereditary factors play any part it must be that of more or less ability to adapt to environmental conditions. In studying environment in relation to a bacterial disease the degree to which it affects the distribution of bacteria to human beings and the degree to which it affects the survival and growth of bacteria in the human body should be considered. In studying the importance of environment in relation to the distribution of infection it is seen that "for those persons who are relatively free from antecedent infection the factor of prime importance in tuberculosis is the infective potential or their environment." This depends upon the number of tubercle bacilli with which the individual comes into contact in a given time. Recent experiments with guinea pigs suggest that too small doses of tubercle bacilli produce neither gross disease nor increased resistance to latter infection; too large doses produce either rapidly fatal disease or a marked tendency to fatal re-activation of disease on latter infection while between these extremes there seems to be a "zone of optimum dosage" which produces benign lesions and a definitely increased resistance to re-infection. While it appears that some such factor is modifying infections among humans and will probably do so more rapidly with the increasing efficiency of our public health organizations the results of uncontrolled infections are still so great as to demand much further work on this problem. Since the "natural" type of tuberculosis appears largely among infants and young children in our communities it is the home environment which must be controlled. Difficult as this is much may be accomplished by education and by the removal of the ill members from the home. The great hope of the future however would seem to lie in the possibility of protecting the new born with known doses of attenuated bacilli. In considering the effect of environment on "modified" tuberculosis we must consider not only the infective potential of the environment but all those elements which are apt to affect the tubercle bacilli in the infected tissues—among these are fatigue, underfeeding, occupational or physiological strain, intercurrent illness and exposure to harmful trade products. Thus the prevalence of "modified" tuberculosis depends not only upon the degree of previous infection but upon the standard of living and occupational conditions of each individual. It would seem therefore that in those groups where "modified" tuberculosis prevails the sanitarian's main object must be to reduce the infective potential of the environment within safe limits. Close study of living conditions is necessary for this. Comparative study of various communities shows that the "young adult" type of mortality tends to prevail in rural communities with widely scattered population and 100 per cent positive tuberculin reactions among contact cases while few of those, both children and adult, free from known contact, give a positive reaction. The "modified" type together with high proportions of positive tuberculin reactions among non-contact as well as among contact cases prevails in crowded city districts. Improvement of both living and working conditions, the isolation and education of open cases and possibly the vaccination of infants are all in line with nature's method of adapting a population to its infective potential and must be used by public health workers if they are to assist nature in her work.

UROLOGY and SYPHILOLOGY

Edited by Rex Bolend, B.S., M.D.
1010 Medical Arts Building, Oklahoma City,

When you begin to minimize the importance of the evidences of a chronic gonorrhea you are coming to the end of your therapeutic rope—and the patient knows it as well as you.

Diversion of the urine, preferably suprapubic, contributes materially to the success of plastic operation of the urethra.

Dyspepsia, flatulence and nausea when accompanied by a dragging pain in the loin, are significant of movable kidney.

That part of the ureter gripping a calculus is usually inflamed and a locus minoris resistentiae. To cut down on the stone at this point necessitates the division of unhealthy tissues, which will not cicatrize as surely or as promptly as would tissues not so vulnerable. It is safer to reach the stone from above.

USE OF PARATHYROID EXTRACT IN HEMORRHAGE

In the prevention and treatment of 347 cases of hemorrhage arising from various sources, Burgess Gordon and Abraham Cantarow, Philadelphia (Journal A. M. A., April 23, 1927), employed parathyroid extract, from 10 to 15 units every thirty to thirty-six hours, except in a few instances in which from 15 to 20 units were administered every twenty to twenty-four hours. The plan of treatment was to continue the injections until cessation of hemorrhage occurred, and then to administer one dose after thirty-six hours. So far as possible other treatment was discontinued. The series includes hemorrhage from the following sources: the respiratory system, the majority of which were instances of pulmonary bleeding; the gastro-intestinal and genito-urinary tracts, and operative incisions in various parts. The extract was also administered to patients with jaundice, and in other conditions in which the clotting time of the blood was prolonged. Cessation occurred in 304 patients, following one or more transient increases in the calcium content of the circulating blood. The most favorable results followed the administration of from 10 to 15 units every thirty-six hours for one to three doses. As a preoperative measure in jaundice, it reduced the coagulation time to within normal limits and apparently prevented hemorrhage. The unfavorable results occurred when overdosage and prolonged administration were employed. In addition, unfavorable results occurred in blood dyscrasia (puerperal hemorrhage and hemorrhagic disease of the newborn) irrespective of the size and number of doses, apparently because of certain local changes in the tissues. As compared with the common experiences with oral and intravenous administration of calcium the results are more dependable, and furthermore gastric irritation and other untoward effects are avoided. The hormone was found to be of special value in patients recovering from surgical operations who were unable to tolerate oral therapy. The use of parathyroid extract is suggested as a means for controlling hemorrhage because it effectively mobilizes calcium salt, which is normally stored in the body and which is necessary for clotting.

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SURGERY IN ITS APPLICATION TO THE TREATMENT OF SELECTED CASES OF PULMONARY TUBERCU- LOSIS*

HORACE REED, M. D.
OKLAHOMA CITY

Surgery as applied in the treatment of tuberculosis involves nothing that is basically new. On the contrary surgery seeks to utilize the oldest and most useful one element in the management of the consumptive, namely: *Rest*.

Over a century ago James Carson, of Liverpool, laid the foundations upon which modern surgical treatment is built. Carson pointed out the mechanical difficulties which hindered in the healing of the lung cavity, and advocated compression of the diseased lung for the double purpose of collapsing the cavity and putting the lung at rest. He advocated that this compression be done by admitting air into the pleural cavity. Eventually an attempt was made to carry out this treatment, but it ended in an absolute failure because there was no pleural space—the surfaces having become adherent. It is not recorded whether Carson, as a result of this failure, entertained any thought of the next, and most logical step in the treatment of the patient, namely: *the surgical collapse of the chest wall*.

Over a half century had passed before compression was again advocated and attempted. Forlanini, and others, noted that benign pleural effusion and spontaneous pneumothorax exerted a favorable influence in unilateral tuberculosis. These observations led Forlanini to advocate, and finally to employ, induced pneumothorax. About four years later, Dr. J. B. Murphy, without any knowledge of Forlanini's work, began to use artificial pneumothorax in the treatment of pulmonary tuberculosis.

The first attempt to collapse the chest wall by means of rib resection was made in 1885, by Cirenville. His work, however, was not based on studies of pneumothorax as was that of later surgeons. Of the several whose labors finally culminated in the development of the modern operation known as extra pleural para veterbral thoracoplasty, we owe most to Brauer, Friederich, Boiffin and Gourdet, Wilms and Sauderbruch. American surgeons have not contributed anything worthy of note in this new field of surgery, and indeed, have apparently been slow in utilizing a method of treatment, the value of which has been so definitely proven by our European colleagues. Only for the last four or five years has any considerable interest been manifested on this side of the Atlantic. Our phthisiotherapists must share some of the blame for this indifference.

INDICATIONS FOR SURGERY

Our conception of the most modern management in the treatment of the tuberculous, is that the patient shall receive the benefit of all measures which the test of experience has shown to be of value. This ideal can only be realized in a well equipped and properly operated sanatorium. Under such ideal conditions, if every victim of tuberculosis could have an early diagnosis—and each one could have if only the signs, which are always present, are properly and promptly interpreted—there would be little or no need for surgery. The mortality rate would be so low as to be practically negligible.

But we face a reality in actual experience which is far removed from the ideal, and it is with realities that we must deal. A large percentage of patients do not seek the advice of a physician until after the process in the lung is already advanced. A certain number, also, who go to a physician even in early stages, it must be stated with chagrin, do not get careful consideration and a painstaking examination, and consequently, are not correctly diagnosed. The result is the same—late diagnosis and an advanced process. May we hope for the

*Read before the Section on Surgery and Gynecology, Annual Meeting Oklahoma State Medical Association, Muskogee, May, 1927.

day when no physician will make such diagnoses, as "nervous exhaustion," "general run down condition," "chronic malaria" and similar statements except that he qualify such "diagnoses" by presentation of proof that a painstaking investigation has been made. And another digression: When will all the profession learn that ordinarily tuberculosis should be diagnosed before the bacillus appears in the sputum—that a contaminated sputum definitely signifies only one thing, namely, an open lesion, and, finally, that when bacilli are found the process is usually advanced?

A patient who has a predominantly unilateral tuberculosis, and who has been given the benefit of a trial of good management without improvement, should be considered as a proper candidate for surgery. Obviously, if in such a patient, pneumothorax can be employed it should meet the requirements for the production of collapse and rest. If it has been employed and satisfactory results not obtained, nothing but disaster can be expected from surgery. Therefore surgery may be employed in certain cases wherein unilateral compression is desirable but cannot be obtained by any other method—in other words, wherein the pleural space is lost or is so reduced as not to admit sufficient air for compression. Finally, surgical compression may be advisable in certain cases in which artificial pneumothorax has been employed over a long period of time, and fibrosis of the affected lung has become extensive. In such a case refilling would have to be kept up—often to the great inconvenience of the patient—for an indefinite period, whereas a collapse of the chest wall would bring about a desired result which would be permanent.

CONTRA-INDICATIONS

Once a step has been taken in surgical compression it cannot be recalled. Experience of the phthisiotherapists has shown that this back step is sometime very desirable in cases of induced pneumothorax, wherein the contra-lateral or better lung has shown increased activity following a compression of the opposite side. Fortunately in pneumothorax, retreat is easily accomplished—the air may be withdrawn, or the filling not being repeated the air gradually disappears. The indications, for surgery, therefore, should be overwhelmingly positive as compared to those for pneumothorax.

In general, we look upon active tuberculosis as a contra-indication for surgical attack. As a matter of fact pulmonary tuberculosis is an absolute contra-indication except in certain acute and grave conditions which of themselves are more threatening than the tuberculosis. For example: We do not hesitate to operate promptly in perforating peptic ulcer, acute appendicitis, strangulated hernia and similar grave conditions which may occur in the tuberculous, but we leave severely alone non-strangulated hernia, subserous fibroids, non-toxic goiter, etc., in the presence of active pulmonary tuberculosis. The situation is somewhat paradoxical. The most outstanding contra-indication for surgery, generally speaking, becomes *sine qua non*, the primary indication for the operation of thoracoplasty. Aside from tuberculosis there are many other contra-indications—relative and absolute—which must be considered before submitting a patient to operation. All these demand the greatest consideration before a final decision is reached to do a surgical compression.

THE OPERATION

Several types of operations have been developed. The one most universally employed is para-veterbral thoracoplasty, extra pleural, known as the Wilms-Sauerbruch operation. It is usually performed in two stages. In the first stage the 5th to the 11th ribs are resected, and in the second stage the resection is done on the remaining upper four ribs. The two steps completed compresses the entire lung and is called a *complete operation*. The desirable time to perform the second step is from two to five weeks following the first—or before bone reformation takes place in the field of the first step. More important, however, than this consideration is the condition of the patient following the first resection. It may be found inexpedient and undesirable to undertake the second step for one of two reasons: firstly, the partial compression may prove sufficient to bring about a desired result in that collapse cavity, or an affected portion of lung is so favorably influenced as to restore a satisfactory clinical picture, or, secondly, the reaction of the patient to the first step may be of such grave concern as to obviously cause a postponement of any further surgery for an indefinite period. The clinical signs are the all determining factors. The interpretation of these signs is a responsibility which rests largely on

the shoulders of the phthisiotherapist. Two of the five patients on whom I have operated have had only partial compressions, and the time in each case has now been several months.

A complete compression may be accomplished in a different manner. In one patient a phrenicotomy was done and was followed within a few weeks by resection of the upper 7 ribs. The removal of the phrenic resulted in a retraction of the diaphragm of about one and one-half inches. This compressed the lung base fairly well, and the resection of the upper 7 ribs collapsed the cavities in the region of the apex. This patient is now doing light work, has little sputum, which is negative for bacilli. Whatever the operation is in any given case—immediate steps must be taken to get fullest amount of compression. Following each step of thoracoplasty a compression bandage is employed, and this bandaging is to be kept up indefinitely.

ANESTHESIA

If we could forget the psychic side of the patient, local anesthesia would be ideal. So far as pain is concerned it can be eliminated by a local of 1-2 per cent of Novocain. Unfortunately very few patients will lie calmly and unperturbed while hearing the rattle of instruments and crunching ribs. If deep, general anesthesia alone is used, there is great danger that bacilli laden secretions, escaping from the collapsing cavities, will be aspirated into the contralateral or healthy lung. The result would probably be pneumonia or a spread of the infection to the opposite lung. The following plan has been found very satisfactory: The field of operation is prepared as for a local. Infiltration is carefully made in the region of emergence of each intercostal nerve. Also a continuous wheal is made throughout the length of the proposed incision. Just before the incision is made a trained anesthetist administers gas-oxygen just to the point where the patient loses consciousness of his surroundings. His cough reflex is not abolished. Should secretions escape into the bronchial tubes he will obey the summons of the anesthetist to "cough it up." During these few seconds all other procedures are stopped. Patients operated with the anesthetic conducted in this manner have not shown the evidences of shock or grave depression which those operated under local alone have shown, but on the other hand have been remarkably bright and cheerful at the close of operation.

AFTER TREATMENT

In our part of the country the Sanatoria are not equipped to do major surgery. If there are exceptions I do not know of them. It is to be naturally presumed that there are no finished surgeons on the resident staffs. For these reasons, therefore, the patient should be transported to the nearest well equipped surgical hospital for operation. Only in such a hospital can a corps of trained assistants—an all important adjunct—be found.

The patient should be returned to the sanatorium bed as soon as it can be safely done. It must be emphasized that surgery is not a cure but is only an additional step in the management which is offered in a small percentage of cases (perhaps 6 or 8 per cent) as a means of bringing about a condition in a patient whereby a cure or an arrested condition may be eventually accomplished. Needless to say the time required to bring about the desired result with the patient able to again take up the ordinary activities of life, will run into many months and even several years, if indeed, he survives at all.

FINAL RESULTS

Let the fact be emphasized that as long as a tuberculous patient gives evidence of making favorable progress under systematic management, he is not to be submitted to surgery. This fulfills the requirements of the indications and non-indications. It follows, therefore, that only the, otherwise, hopeless are submitted to surgery, and if even a small percentage are rescued by a somewhat desperate means, the end results are amply justified. I have performed eight operations upon five patients. The first operation was more than two years ago, and the last one some months ago. All these were patients of Dr. L. J. Moorman, and I hope that he will be able to report their present status in his discussion today.

Alexander was able to collect data on the results in 1159 cases. He states that these cases constituted practically all that had been reported throughout the world for the seven years preceding 1925. Of the 1159 cases, 36.8 per cent were cured, and 24.4 per cent were improved—total favorable results of 61.2 per cent. A "cure" means that the patient has been able to work for at least a period of one year without a return of his symptoms. The above figures speak so forcibly that elaboration is not necessary. Alexander estimates that in round numbers, there are

30,000 patients in this country who present suitable indications for surgery. If we assume that Oklahoma has her proportionate share of these, there are about 600 such patients in our state. I do not know whether these figures are even near the truth. All of us do know that a comparative small percentage of our tuberculous are cared for in our sanatoria, and that we have a vast throng who are undiagnosed, and, of course, are not being treated.

The result of the campaign for the spread of information concerning tuberculosis is very gratifying. This work with increasing momentum is bound to keep moving on, but will not help those already among us who by all the so-called standard tests are hopelessly ill and doomed to early death. The tendency is all too prevalent among us when we see a case of advanced consumption to shrug our shoulders in dismay and offer only the bitter cup of false consolation which carries in its dregs utter hopelessness.

All these with advanced tuberculosis are human beings, who love life, and want to live, and who have a right to live and be like other people, if by any means whatsoever this right can be restored to them. It is up to us, the medical profession, to do all that we can in the light of our present knowledge, to the end that none may die without having had a fair chance to live by whatever means that chance may be given. Will we do our whole duty?

Discussion: By R. M. SHEPARD, M.D.,
Superintendent, State Tuberculosis Sanatorium, Tahina, Oklahoma.

In opening the discussion of Dr. Reed's paper I would like to call attention to methods of surgical treatment of pulmonary tuberculosis, all of which have one primary object and that is to collapse or arrest motion of the lung in question.

Why a surgical interference? In the first place, some of the writer's happiest results have been to control hemorrhage, then immobilization produces to a degree stasis of the lymphatic vessels and lessens the toxic absorption into the blood stream from the diseased lung, and further permits of a more rapid formation of fibrous tissue. Then your patient in the later stages is facing a cavity formation with a continuous expectoration and probably a source of danger to those whom they come in contact with in the future.

The first method to be considered and most frequently used is artificial pneumothorax, the second is thoracoscopy with cauterization, the third is extrapleural thoracoplasty; then there are some other methods that have been used but with very little encouragement, such as extrapleural pneumolysis, apicolysis and phrenicotomy. The latter seems to have several followers who have gotten some results.

The time to choose operative interference has to be determined by the type of pathology, condition of the patient and his response to routine care. The first ideal indication for operative interference is a unilateral pulmonary involvement or very little pathology in the better lung, and that has not responded to usual sanatorium rest and care. This type of case with no adhesions usually gives happy results with artificial pneumothorax. In cases where artificial pneumothorax has been used and adhesions have later obliterated the space, thoracoscopy with cauterization will allow the refills to be continued. Whenever this is impracticable then follows extrapleural thoracoplasty.

Extrapleural thoracoplasty is just coming into its own. Dr. Reed reports 1159 cases collected prior to 1925. With interest that has been taken in this operation in the larger centers among the tuberculosis students, there is probably now twice that number.

Thoracoplasty is an operation that must be done by a skilled surgeon only and directed by a trained clinician. It is necessary for the surgeon to have details from the clinician as to the condition of the lungs, the patient and the previous and after care.

Dr. Reed has covered the operation of thoracoplasty and my views of the work from the clinical side.

Time is too limited here for a discussion of artificial pneumothorax which is being extensively and successfully done in all modern sanatoria, and with which the writer has had the happiness of relieving many patients and making them useful citizens in so doing.

We must not lose sight of one thing that will exist as long as time comes and that is: if there should be discovered, which will be done in the future, a chemotherapeutic treatment that would destroy every tuberculosis bacilli in the host, there still exists a pathology in the lungs that will

take time and assistance to heal into new and strong tissue.

Surgical aid will still be indicated and demanded. Sanatorium care and regime will always go hand in hand with any treatment, and especially surgical interference.

I would like to emphasize the fact of a need for an early diagnosis of tuberculosis, and a strict routine, for in the past operative interference has been used as a last resort and has consequently met with discouragement. As most cases should be under observation for a time before the proper procedure can be determined. With an early diagnosis the patient can be given the benefit of good management and without improvement surgery application can be given ere it is too late.

THE SURGICAL TREATMENT OF TUBERCULOUS PERITONITIS*

LEROY LONG, M.D., F.A.C.S.
OKLAHOMA CITY

For many years it has been known in an empirical way that the exudative type of tuberculous peritonitis might frequently be relieved by celiotomy. During the last few years a good many cases have been reported cured after aspiration followed by injections of oxygen, sometimes supplemented by heliotherapy.

The treatment of tuberculous peritonitis by the introduction of oxygen per cannula or needle has been recommended in lieu of celiotomy because it was thought to be safer. There would seem, however, to be a few drawbacks. First, the introduction of a trocar or needle into a peritoneal cavity that is the site of an extensive tuberculous peritonitis is not always a safe procedure on account of the danger of wounding adherent viscera. Second, it is not possible to remove all of the exudative fluid by aspiration. Third, in those cases originating from tuberculous abdominal foci the foci are not removed. Fourth, the sum of these various drawbacks makes the aspiration and oxygen injection method a procedure that is more or less indefinite and uncertain—in some cases not devoid of danger.

There is, again, the argument against celiotomy that the average patient has a

pulmonary tuberculosis, and is, therefore, a very poor surgical risk. We are convinced that this is not always true—in fact, it is not at all unusual to have an extensive tuberculous involvement of the peritoneum without demonstrable evidence of active pulmonary pathology. This has been observed in various types of surgical tuberculosis, as, for example, tuberculosis of the glands, the fascia, the skin and the skeletal structures.

We believe that in a good many of the cases the causative organism belongs to the bovine strain, which does not seem to have a predilection for human pulmonary tissue, and we believe that there is good reason to conclude that the infection frequently takes place in a direct manner by way of the mesenteric lymphatics. It is not common to find calcareous masses, most reasonably of tuberculous origin, in the mesentery in individuals in whom the existence of tuberculosis of any type has never been even suspected.

Operative procedure for the cure of tuberculous peritonitis has its most useful application in the typically exudative form, or in the form in which there is a combination of the exudative and fibrous forms. It is not advised in the typically fibrous form without demonstrable exudative fluid, or in the ulcerative form, which is generally suspected by the existence of evidences of profound toxemia. In our opinion operation should be done in only the form in which there is early demonstrable ascites. The following cases are illustrative:

Case I.—F. M. D., white, 47 years of age, traveling salesman, was examined November 15th, 1923. He complained of tightness and fulness of the abdomen, weakness and a little fever. These symptoms had been present for two months, but for five months he had not been well, the decline in health beginning with what he designated as a "nervous breakdown" that necessitated a rest of several weeks. Preceding the tightness and fulness there were cramping sensations in the abdomen. He was a frail man, but he had not lost weight. There was aching in the lumbar region. This was worse at night and most pronounced at three or four o'clock in the morning. It was partially relieved by exercise. The pulse was 92. The blood pressure was Systolic 138, Diastolic 78. The temperature was 99.4. There was no adenopathy. The lungs were negative. The abdomen was moderately distended and

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tense with shifting dullness. In the epigastric region there was resistance that suggested an indistinct, poorly defined mass.

This patient entered hospital November 27th, 1923. At that time the red blood count was 4,200,000, hemoglobin 95 per cent; white blood count 8,050, neutrophils 59; small lymphocytes 22; large lymphocytes 17. The urine was negative.

Operation was done November 28th, 1923, through a 7-inch incision. About 700 c.c. of dark, straw-colored fluid was removed by sponging. There was more on the right than on the left side. All viscera were fused together by the exudate. Tubercles were thickly scattered over all peritoneal surfaces. The liver was covered with tubercles, but it seemed to be in normal size. There was no mass in the epigastrium where the resistance had been felt. After sponging out all the fluid the abdomen was closed without drainage. There was no attempt to interfere with the fused viscera. The fluid removed had a specific gravity of 1.028. The cell count was 2,870, there being but one neutrophile, all the others being lymphocytes—two large and 97 small. Some of the ascitic fluid was injected into the peritoneal cavity of a guinea pig. Autopsy some weeks later did not show tuberculosis. This, however, did not change the diagnosis, as ascitic fluid does not always carry the organisms. The pathologist reported miliary tuberculosis, the report being based upon the examination of a tubercle removed at operation.

This patient was discharged from hospital December 13th, 1923—two weeks after the operation. He improved slowly but progressively. Six months later he reported for observation. There had been no return of the ascites. He felt well. He reported that he belched a good deal without reference to taking food. The appetite was good. He was sleeping well. He had been at work as city salesman for several months, driving a car in his work. In the office, the pulse was 88, temperature was 99.4. There was a hacking cough, but he did not raise anything. No trouble could be made out in the chest. He looked well. He stated that he felt better than he had for a long time.

He is now, over three years after the operation, actively engaged in his work as a traveling salesman, and he says that he feels as well as before the development of the tuberculous peritonitis, but he is

careful in following our advice to not work long hours and to have regular habits.

There is an occasional case that simulates typhoid fever. Here is one that was handled as typhoid fever for a number of weeks:

Case II.—Miss R., student nurse, 24 years of age, entered hospital June 20th, 1922, on account of fulness of abdomen, without any particular discomfort, for a period of about a month, accompanied by a daily afternoon temperature of around 100, and progressive weakness. Up to the time she entered the hospital she had been up and about, and trying to carry on her work.

At the beginning of the illness, about a month before, she had been given two doses of typhoid vaccine. She had had one dose about a year before.

She was fairly well nourished. There was no glandular involvement. The chest was negative. The blood pressure was Systolic 100, Diastolic 70. The urine was negative with the exception of an over abundance of urates. The feces were negative. The red blood count was 4,140,000, hemoglobin 80 per cent, white blood count 6,200, neutrophils 82. A few days later the white blood count was 7,650, with 67 neutrophils. The Widal was positive.

The record made up by the Medical Division shows that at that time the abdomen was very much distended, hot to the touch, slightly tender, but not in any one particular place. It was tense throughout.

The temperature was remittent. It ranged from 100 to 103.

There was a provisional diagnosis of typhoid fever, and she was treated in the Medical Service. The record shows that there was fever for several weeks, running as high as 103. By August 1st—about six weeks after entrance, the temperature had gone down to 99, but the abdomen was markedly distended.

We saw this patient as a consultant soon after her entrance to the hospital. We were requested to examine the condition of the pelvic organs—this in view of the distended abdomen. We reported that the pelvic organs seemed to be normal. We did not have a very definite opinion as to the cause of the abdominal enlargement.

We saw her again as a consultant on September 19th, 1922, after she had gone through the long period in the hospital.

At that time she was up and about, and felt fairly well, but there was very marked abdominal distention with shifting dullness. Succussion was positive. It was concluded that she had an ascites due most probably to tuberculous peritonitis; or possibly, in connection with a neoplasm of some character. We did not believe that it was due to portal obstruction because there were no other evidences of portal obstruction.

On October 2nd, 1922, a paracentesis was performed with some hesitation. About 1300 c.c. of straw-colored fluid was removed. It had a specific gravity of 1.026 and a cell count of 68, of which 80 per cent were lymphocytes.

Operation was done on October 16th, 1922. One of the striking conditions was the enormous thickening of the peritoneum at the point of the incision—it was about one-third of an inch in thickness. Tubercles almost literally covered all peritoneal surfaces. There was not a square centimetre that was free from them. There was such extensive fusion of viscera that it was impossible to identify the different parts of the intestinal tract. There was a large amount of straw-colored fluid which was removed by sponging. The fused viscera were not disturbed. Several tubercles were removed for examination, the abdomen filled with normal saline solution and closed without drainage.

The pathologist reported miliary tuberculosis.

This patient was discharged three weeks after operation. She improved slowly, but, altogether, in a very satisfactory way. Now, over four years after the operation, she is entirely free from ascites, and the general health is satisfactory. Strangely, there is no particular trouble manifest in connection with the intestinal function dependent upon peristalsis, notwithstanding the remarkable fusion of all the abdominal viscera. She is working as a housekeeper. On several occasions she has insisted that she be permitted to re-enter training school.

We wish to emphasize the danger of carrying out a surgical procedure if there is a frank pulmonary tuberculosis. In such a case we believe that it would be unwise to do a celiotomy for tuberculous peritonitis, for the reason, first, that a surgical operation would not be tolerated well; and, second, because operation would be of doubtful efficacy on account of the probability of reinfection.

In our opinion, it would not be very difficult to make the diagnosis in the type in which the operation would be of service if we will bear in mind that celiotomy should be done only in those cases in which there is an early demonstrable ascites, the patient being at the same time in fair general condition.

OBLIQUE INGUINAL HERNIA*

A Fundamental Factor In Its Cure

GREGORY A. WALL, M.D. F.A.C.S.
TULSA

Hernia, so often called rupture by the laity and profession, is not a rupture at all, and not necessarily dependent on a rupture. That it does, at times, follow a rupture, is a self-evident fact; for instance—hernii cerebri following skull injuries, and the various forms of abdominal hernia following trauma to the walls, either accidental or operative.

Hernia, as I define it, is the protrusion of an organ from its normal location, through a normal or abnormal opening into an abnormal location; for instance, diaphragmatic hernia in which nearly all the abdominal organs may be found in the chest cavity.

This paper deals exclusively with the cure of oblique inguinal hernia, and no mention will be made of any other forms. The multiplicity of operations which have been advanced for its cure is self-evident proof that the proper one has not yet been found.

Do not think that the one here advocated is the last word in its cure; I am not presumptuous enough to say that, but I am offering it for what it is worth, as being more nearly anatomically correct than any which has been described in the past years. Also, no priority is claimed, although I had been using this method prior to 1922, when Edmund Andrews published an article with a similar technic, but he went much farther in surgical repair of the inguinal canal than is done by me in the operation to be described.

No one will, I am sure, dispute the statement that recurrences have been frequent, following the operations so far advanced for the cure of this condition. Therein lies the reason for the variety of modifica-

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tions of herniotomy, as it applies to this type of hernia. There is at this time, no standardized operation for this condition, such as we have for ventral and umbilical hernias. I believe that the curative procedures for these conditions have reached as near perfection as human skill can make them; and the reason is, that we have applied our anatomical knowledge to the anatomical facts. The cure of these forms of hernia has been brought about by realizing that the factor which plays the greatest part in their production is a fascial weakness or rupture. Surely you will agree with me when I make the statement that hernia cannot occur if the fascia serves the purpose for which it was put there; this is, I am sure, an indisputable fact.

I am convinced that the operation for the cure of this form of hernia requires more skill, more knowledge of surgical anatomy and a more careful technic than is necessary in any other operation, if we are to prevent recurrences. I have heard men with slight surgical experience say, that they have no trouble at all in curing hernia since they can readily differentiate the various coverings, and this in the face of the fact that men of wide experience state that they can very rarely demonstrate the coverings of an inguinal hernia. It is absolutely impossible to do so in old chronic hernias and those in which a truss has been worn, because the chronic inflammation destroys the anatomy of the canal, and all the layers are lost in a mass of induration and semi-scar tissue. But a knowledge of the coverings of inguinal hernia is valuable only as an academic and anatomical exercise. They are of no practical interest to the surgeon and their recognition is not necessary, and, with one exception, they play no part either in the production or cure of this type of hernia under discussion.

I came to the conclusion six years ago that the very careful reconstruction of the layers of the inguinal canal, had nothing to do with its permanent cure. On the other hand, it is my conviction that the present methods of closing the canal are unnecessary, anatomical and illogical, because we have changed the position of the parts which go to form the canal.

I have not, for years, done a Bassini operation, for the reason that I have felt that it was useless, and that it changed a normal into an abnormal anatomy. It never appealed to me since it placed the

cord in a false position, under the skin and superficial fascia, where it was exposed to traumatism and where it never was intended to be; if the Creator had intended to have it there, He would have put it there in the first place.

There seems to me to be just one fundamental factor underlying the cure of oblique inguinal hernia and that is, the proper closure of the internal ring and that can only be done by giving attention to the Transversalis fascia. We all remember that Ochsner, some years ago, went so far as to advocate that the only thing necessary to do to cure a femoral hernia was to thoroughly free the sac until it fell back into the abdominal cavity, transfix and ligate it when the ring would close of its own accord, due to the fact that the tendency of all anatomical openings is to close, when they do not include a serous sac or are lined with mucous membrane.

In order to comprehend the importance of the Transversalis fascia in the production of this kind of hernia, it may do no harm to dwell a little on the anatomy of this fascia in the inguinal region. The T. fascia, also called the white fascia, is a thin aponeurotic membrane, which lies between the inner surface of the T. muscle and peritoneum. It forms part of the general layer of fascia which lines the interior of the abdominal and pelvic cavities, and is directly continuous with the pelvic and iliac fascia. In the inguinal region this fascia is thick and dense in structure, and joined by fibres from the aponeurosis of the Transversalis muscle. It is attached below as follows: external to the femoral vessels, it is connected to the posterior margin of Poupert's ligament and is there continuous with the iliac fascia. Internally to these vessels, it is thin and attached to the os pubis and pectineal line, behind the conjoined tendon with which it is united. It then descends in front of the femoral vessels as they pass into the thigh, forming the anterior wall of the crural sheath. The spermatic cord in the male and the round ligament in the female, pass through it at what is known as the internal ring.

As a result of a congenital defect at this point which causes a thinning of the fascia from non-development, and this added to the intra-abdominal pressure, we have as a result, a fold of peritoneum forced though it forming a sac, and as this passes down the thinned Transversalis fascia becomes closely attached to it, and this we call the

infundibuliform fascia which is not a separate anatomical entity at all as we are prone to suppose, but only a part of the T. fascia. Hence, if the defect in the fascia had not been present, there never could have been a hernia. Now, if this is the real predisposing cause of hernia of this type, and I am convinced that it is, what ends can be gained by all the plastic surgery which is being done to close the canal? Had the fascia been fully and normally developed, as it is in the majority of persons, there never would have been any sac to get into the canal. It appears to me just as plausible to close a long lane into a field, to prevent the stock getting out, instead of closing the gate leading into the lane. Since we know that post-operative recurrence in this form of hernia is frequent, then there must be a fundamental reason and in my opinion, that reason is the failure to utilize and repair the Transversalis fascia properly at the internal ring. You may close the canal in any manner and as carefully as is possible, but until the internal ring is properly closed there will always be a great chance for a recurrence.

Most, if not all, operations for the cure of hernia displace the anatomy of the canal, besides suturing tissues to one another which do not unite at all firmly. Suturing the Transversalis muscle to Poupart's ligament has been done for ages, by all of us.

Seelig and his co-workers have shown fairly conclusively, by extensive experimental work, that muscle and fascia do not unite when sutured together. Others have in a way, denied this but they have overlooked the fact that it is only the epimysium of the muscle which becomes feebly attached to the fascia. This union is not at all a firm and lasting one. The next time you do a laparotomy, observe how readily you can separate the rectus from its sheath, then you will see that there is practically no union between them. Now, if this be true, then the suturing of the Transversalis and conjoined tendon to Poupart's ligament, is a useless and unnecessary procedure. If we are going to sew anything to this ligament, let it be the aponeurosis of the External Oblique—fascia to fascia will unite. Realizing this fact, McArthur brought forth the idea of using fascial sutures to unite muscle and fascia, feeling that sutures of foreign material were of no value.

It is conceded by all operators that in rare instances the Transversalis fascia cannot be isolated, still, we can, usually, by careful dissection combined with a good knowledge of anatomy, find it sufficiently to utilize it. After having freed the sac as thoroughly as is possible, from its adhesions to the infundibuliform fascia, transfixing and ligating it and permitting it to fall back into the abdomen, then look for the T. fascia and close the internal ring with chronic No. 2—40-day catgut, being careful not to constrict the spermatic cord. It is my contention that when you have done this, that you have done the only necessary thing to cure the hernia because you have closed the gate to the canal, hence, nothing can enter it.

All the suturing and imbricating of the various layers that go to form the inguinal canal, are, to my mind, a waste of time besides adding more traumatism. Let the canal remain as nature made it and do not place organs or muscles in false anatomical positions.

I have been doing this operation for the past six years and if there have been recurrences, the patients have gone elsewhere for the second operation. As a rather convincing argument in favor of the reliability of this procedure, permit me to report briefly a case which came under my care one year ago.

A large, middle-aged man, physically, well developed, had had a massive scrotal hernia for years, which completely filled the scrotum until it was 12 inches long and 15 inches in circumference. He suddenly developed symptoms of strangulation and was removed to a hospital as an emergency case. The operation was a very tedious one, because of the great amount of adhesions and the size of the mass, comprising as it did, the whole of the great omentum and part of the transverse colon. The omentum was greatly indurated, and I was compelled to excise at least one half of it before I could return it to the abdominal cavity. The man suddenly went into shock, compelling a rapid closure. As nearly as I could determine, the T. fascia was picked up and the fascia sutured with No. 2 chromic gut. The rest of the operation was completed by silkworm gut sutures placed through the layers without any thought of anatomical apposition whatsoever. He left the table in a serious condition but reacted in a few hours and made an uneventful recovery. At the present writing there has been no recurrence and

he is carrying on his vocation, that of a laborer. To me, this case proves rather conclusively that the fundamental factor underlying the cure of this type of hernia, is the proper closure of the internal ring by suturing the Transversalis fascia, and that all the fancy work done to reconstruct the inguinal canal, is a waste of time, unnecessary and anatomical.

Realizing, as I must, that it will appear rather presumptuous on my part to so greatly disagree with most, if not all men of wide experience in this condition, nevertheless, I feel justified in my conclusions having reached them after a fairly large experience in hernia work and some considerable study of the anatomy. If you will give this method some consideration, I am convinced that you will see the logic of it, and will agree with me that it shortens and simplifies the operation, as well as preventing so many recurrences in the operation for oblique inguinal hernia.

ACUTE OSTEO-MYELITIS*

RALPH V. SMITH, M.D.
TULSA

I read a paper of this same title before the Medical Society of the Southwest, October 1913, from which I shall quote freely.

It is because of the frequency of the disease, its rapid and destructive progress, the many mistaken diagnoses, or diagnosis if made at all, too late, even though a fatality be averted, to hope for good anatomic or functional restoration of the limb that induces the writer to again submit the subject for discussion.

Acute osteo-myelitis is a disease of childhood and early adult life; possibly 75 per cent of all cases occurring between the ages of five to 15 years and only an occasional case being reported after the nineteenth year, although cases have occurred much later in life. As between sexes about two boys to one girl are affected. Exposure to wet and cold are predisposing factors, also a preceding attack of some infectious disease especially the exanthemata—measles and scarlet fever. A slight injury may sometimes be followed by an attack of osteo-myelitis but the writer is not in accord with those who believe

that it is the usual predisposing cause. Sprains or, as suggested by Starr, a slight twisting of the epiphyseal cartilage on the shaft is the type of injury to be followed with an attack. This may be true in some cases but when we consider that the disease is often multiple, affecting as many as three and four bones within a short period of time it is rather unreasonable to believe that each affected bone sustained an injury of any type or degree. In the opinion of the writer a more plausible theory may be found in the gross and histological structure of the long bones taken in conjunction with the blood supply.

In 1875 Pasteur demonstrated the truly infectious nature of the disease when he isolated the same germs as found in the ordinary boil and applied the term "Furuncle of Bone." The staphylococcus is the germ of infection in about 80 per cent of all cases, the streptococcus following with about 15 per cent, while the pneumococcus, meningococcus, gonococcus contribute their share of the remainder.

It is quite definitely established that the disease always begins in the diaphysis of the bone but in the cancellous part. Seldom, if ever, does it begin in the epiphysis but the seemingly epiphyseal cases are those in which there has been an early perforation of the epiphyseal cartilage.

The red marrow filling the spaces of the cancellous or spongy part of the bone is largely embryonal tissue. The blood supply comes through the metaphyseal arteries or branches of the nutrient artery and are all terminal. The cylindrical part of the shaft also has a cortical blood supply from the very vascular periosteum through the Haversian canals. The capillaries of the spongy portion are several times larger than the arteries leading to them thus causing stagnant blood supply, the return circulation arising from blood spaces rather than the usual capillary system. Hence the deduction that an embryonal tissue supplied by terminal vessels carrying a retarded blood current is sufficient reason why the infection always occurs in this part of the bone and without reference to any slight injury that might or might not have occurred.

Inflammation in the bone does not differ from inflammation in any other tissue of the body. The infection having occurred toxins are thrown out causing necrosis; and because of its density the destruc-

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tion of bone is more rapid than in the soft tissues of the body. The involvement of the medulla of the cylindrical part of the bone may be by direct extension through the cancellous structure or by the metaphyseal vessels thru the thin cortex at ends of the long bones to the sub-periosteal space. The pus follows along the shaft of the bone raising the periosteum which in the cylindrical part is rather loosely applied to the bone by a thin layer of areolar tissue. At the ends of the bone, however, the periosteum is applied more closely to the bone and in the fine epiphyseal grooves its very firm attachment serves to safeguard the neighboring joint.

From the sub-periosteal abscess the infection is carried through the Haversian canals and the entire medullary canal may become involved. Likewise the process may continue until the entire shaft is denuded of its periosteum. Should the endosteum be destroyed death en masse of the bone occurs. If, however, early perforation of the periosteum occurs or because of early incision and drainage the disease may not be so widespread and the area of necrosis may involve only a small area of the cancellous part of the bone, or the resulting sequestrum be at least much less than the entire shaft.

The symptomatology of acute osteomyelitis is usually very distinct. The attack is often attended with a chill followed by high temperature. Pain at onset and ordinarily located near, but not in, the joint. The character of pain is significant. Not of the acute lancinating type, but of a dull boring character and none the less severe. The temperature is usually high, reaching 105 degrees; tongue coated and parched; skin hot; pulse rapid. Swelling is not usually an early symptom, and when it does appear may be too late to be relied upon in establishing an early diagnosis. Light percussion over the affected part may determine early tenderness. Extreme prostration and evidence of a marked degree of toxemia soon manifest themselves and in grave cases the patient may rapidly sink into coma death.

In making a diagnosis the disease must be differentiated from inflammatory rheumatism, infectious arthritis and cellulitis. It is generally agreed that the term, inflammatory rheumatism should be deleted, or, if used at all, should only be applied to an acute systemic infection with or without joint involvement and usually presenting throat symptoms; rise of tempera-

ture and alternating periods of profuse perspiration; pain generally throughout the body and rapid involvement of some of the joints. *Acute rheumatism does not get into one joint and stay there; neither is there any aftermath.*

A careful history with reference to a recent skin infection, superficial abscess or boils, also some recent wounds, especially about the feet, will be of value. In rheumatism the pain is in the joint and point of tenderness over the synovial sac whereas in osteomyelitis the pain is near the joint and by careful palpation a point of tenderness may be found along the epiphyseal line. In rheumatism and infectious arthritis movement of the joints cause marked pain while in osteomyelitis careful passive motion does not cause pain. In infectious arthritis usually but one joint is involved and very often is of specific origin. There is early swelling of the synovial sac about the joint with impaired motion. In cellulitis we have early rapid swelling and on close examination a small skin wound may be found.

Differential blood count should always be made as osteomyelitis shows high leucocytosis and high differential. History of preceding illness or slight injury or exposure to wet and cold are all of value. Tapping on bone in long axis of limb sometimes causes pain at point of infection and percussion over limb is of more value than pressure in eliciting tenderness. Upon the prompt correct diagnosis depends the success or failure of the treatment, and the difficulty in making a diagnosis is no excuse for the many failures to do so.

The treatment of acute osteomyelitis is founded on a definite surgical principle. "Early incision and drainage." As above noted by carefully palpating along the epiphyseal line a point of tenderness is usually found. At this point an incision to the bone should be made. If pus is found beneath the periosteum the whole problem is solved and indications clear. If no pus is found, even so, the surgeon should explore the bone either by drill, small trephine, chisel or whatever instrument he chooses. By drilling the bone several directions pus is usually found and a larger opening should then be made with chisel. If relieved early, this, in many cases, is all that is necessary and complete recovery may be had within several weeks. If, however, the disease process has extended to the medulla of the cylin-

dricul bone, a groove must be chiseled out throughout the length of the infected area. The hollow of the bone may be carefully wiped out but not curretted.

If, before treatment has begun, the disease has progressed to the point of sequestration another problem presents itself which does not come within the scope of this short paper.

610 Tulsa Trust Building

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EARLY DIAGNOSIS AND TREATMENT OF ACUTE ANTERIOR POLIOMYELITIS*

W. ORLANDO SMITH, M.D.
TULSA

In the so-called cerebrospinal symptoms suddenly appearing in a person up to then well, or at the moment suffering from some other condition, one will think of encephalitis or meningitis, providing certain things can be ruled out such as trauma and systemic diseases such as neuritis, uremia, eclampsia, diabetes, spasmophilia, acidosis and neurosis, arterial disease and hemorrhagic tendencies also embolism from some septic process and thrombosis, while one will have to make a special survey from the angle of otitis (central involvement through extension, metastasis or sinus thrombosis), parasites, bacteria and occasionally tumor cells from elsewhere, getting into the head, and finally endogenous and exogenous toxins, drugs and chemical poisoning.

In some cases the lumbar or suboccipital puncture achieves the diagnosis, the liquor findings being characteristic or even pathognomonic; in others it clinches an opinion clinically attained, while in still others it serves but negatively, or even at times, confuses the issues. It is necessary, therefore, to bear the diagnostic possibilities in mind and collate the clinical data with the liquor findings and laboratory norms.

Among the encephalitides, we have the primary group: Heine-Medin, influenzal, epidemic and a type which might be labeled, "without evident or known etiology," this last being of two forms, (a) with definite hemorrhagic encephalitis lesions, and, (b) without discoverable lesion, that is with an apparent anatomic basis, and a secondary group: consequent to the infec-

tious diseases, to the exanthemata, to toxemia, autotoxemia, intoxications and to trauma. Oppenheim has brought up the possibility of a syphilotoxic encephalitis on the basis of lues. There are the unusual primary forms of sunstroke and heatstroke and an unusual secondary due to dysentery, also tropical malaria may be mentioned.

Among the meningitides, we again have several primary forms epidemic, tuberculous, possibly influenzal though unusual and possibly a primary serous form also very unusual, and rarely a serous meningitis as an expression of Heine-Medin disease and secondary: tuberculous, pneumococcal, staphylococcal and streptococcal, influenzal, diphtheritic, gonococcal, syphilitic, enteritic, rarely on the basis of scarlet and acute rheumatic fever, etc., and the sympathetic aseptic purulent and serous forms.

The object in this paper is confined to acute anterior poliomyelitis, a malady which causes an enormous loss to the community and to the state, as well as the sociological aspect, and to impress the value of early diagnosis for successful treatment. The above is mentioned to merely outline the extensive group of cerebral spinal sequela that may be confusing in the early stages of this disease.

Acute anterior poliomyelitis usually begets a previously entirely healthy child or adult, occasionally with prodromata, more often without. (In the great Swedish epidemic they were rare, though Brostrom mentions stiffness and spasms occasionally preceding the paralysis.) One has spoken of this prodromal stage as the pre-paralytic stage. There is, however, nothing whatsoever characteristic about this infection. The onset may be sudden, pre-acute, gradual or protracted. A number of cases show a "forestage-remission-recidive" progression. This has sometimes been termed the "dromedary" type of case. It may run its entire course in two or three days, a week, or over a longer period. The temperature may be high, low or absent. The onset is like that of any acute infectious disease: temperature, headache, vomiting, frequently loose bowels. Very rarely there is a convulsion. Often pain is present all over, especially in the head, neck, back and stomach. One must be wary of appendicitis, coxitis, joint rheumatism, polyneuritis. Rarely there is a swelling of a joint. Eruptions of various types may be seen—or may be absent. If in the midst of an epidemic and this is all

*Read before the Section on General Medicine, Neurology, Pathology and Bacteriology, Annual Meeting, Oklahoma State Medical Association, Muskogee, May, 1927.

there is, one will say "abortive poliomyelitis." If not in an epidemic, one might diagnose, "grippe" or "gastro intestinal attack," or sometimes sore throat. In fact, pharyngitis and tonsilitis are not infrequently present. Or, again, rarely, a grave condition may ensue, with convulsions or coma—the picture being undifferentiable from tuberculous or epidemic meningitis. In some abortive cases, merely the patellar reflex may be absent, or there is a passing meningeal phase.

Then comes the paralytic stage. After a day or two or three, so something is added to the above—paralysis. This gives the diagnosis, though spinal puncture may have already intimated it. The paralysis comes rapidly in full effect from the start (differing thus from polyneuritis). In most cases the paralysis is flaccid, and in the extremities with a loss of tendon reflexes; in many cases they involve the cranial nerves—asymmetrically; in a rare few they are spastic, and indicate cerebral mischief.

There is intense sweating, great hyperesthesia, and nuchal a pain on extending the head. There may be stiffness and pain in the back; but pain with decided spinal laxity also occurs. Rarely a herpes zoster appears, showing involvements of the spinal ganglion. Trembling and twitching may be noticed, drowsiness, retention of urine.

Thus the course of the disease may be divided into three stages; namely, the first or febrile stage; second, the convalescent or stage of partial recovery; and third, the chronic or the stage of stationary paralysis.

Stage one, or febrile stage is that period of the acute infection and varies greatly as to severity. In some cases the paralysis may follow several days of high fever, severe headache, gastro-intestinal disturbance and pain in the back and neck. Blood and lumbar puncture show the following, and the findings here hold good for conditions in which cortical (encephalitic) involvement is not present, but merely disease of the brain stem, or, indeed, of the spinal type itself, as all forms give a meningeal irritation or reaction.

A blood leucocytosis PMN—pressure of liquor usually increased—usually clear—there may be slight opalescence—cells increased (Pleocytosis: preponderantly mononuclears) (15 to 20-1000) or over; 450 average (but lower averages have also

the 10 treated with serum and spinal been given i. e. 20-100).....No bacteria are found.....albumin is increased—globulin increased (slight, moderate, more often, marked). Glucose (Fehlings always well reduced, but Fehlings reduced by most other spinal fluids, too, so really, not a dependable finding. A web or fibrous net is occasionally seen after standing). Colloidal gold curve corresponds to that of a weak syphilitic spinal fluid. They are usually the typical findings.

Treatment:—The foregoing is a superficial summary of the most prominent literature on the diagnosis of this fearful disease; volume upon volume has been written as to the etiology, pathology, symptomology and epidemiology. It was only a few years ago that treatment to prevent the paralysis began. During the past two years several reports were given on the treatment and control of acute polio. Show, Thelander and Fleishner advise the use of the convalescent serum, swinging back to the teachings of Levaditi, Flexner and Lewis, but differing in the technic, as the serum is given intravenously and intramuscularly, while by these early teachers it was given intraspinally. Undoubtedly this was the wrong technic, as their results were very poor. Rosenow, Slugg, Clark and Dow report brilliant results by the use of the antipoliomyelitic horse serum. Yet none of these reports seem to achieve the results desired.

It was my privilege to be on the isolation service at the General Hospital in Kansas City during the 1925 epidemic and during my service there associated with Dr. Rex. L. Dively, who has done some work in the treatment of acute poliomyelitis. Our series of cases at that time were fourteen, which I personally followed.

Our outline of treatment was as follows:

Strict isolation, early and repeated spinal drainage to keep down the pressure, followed by antipoliomyelitic serum given intramuscularly directly after the spinal drainage and general hygienic treatment. The immediate effect of spinal drainage on the acute symptoms was almost phenomenal. The symptoms disappearing for the most part a very short time after the drainage and only appearing when the spinal fluid pressure again raised.

Ten cases received treatment as above outlined, four received only medical treatment with no aim at specific therapy. Of

drainage, the results were as follows: Two cases showed no paralysis, although the symptoms and spinal fluid findings gave a typical picture of poliomyelitis. Three, or 30 per cent showed recovery to almost normal. One showed good recovery and two showed only fair recovery. Two patients, or 20 per cent, died. One, we believe, died of secondary meningitis, the second of pneumonia. In all cases except two the serum was given after the paralysis was noted, so our results must be gauged accordingly. The acute symptoms in every case abated almost immediately after the spinal drainage and administration of serum.

Four cases did not receive serum or spinal drainage. Of these, two, or 50 per cent died; one after 36 hours of illness and the other, ten days after the first symptoms were noted. Both died of respiratory failure, the infection probably attacking the centers of respiration. The other two had extensive limb paralysis, which showed no improvement over a period of observation lasting four weeks.

The above results were so gratifying to us that Dr. Dively procured some monkeys for a series of experiments in which a parallel study of the specificity of the human convalescent poliomyelitic serum and the antistreptococcus poliomyelitic horse serum prepared by Dr. E. C. Rosenow. The objects of these experiments were to study the comparative neutralization, immunization and serum treatment in the acute stage. His conclusions are: (1) Human convalescent poliomyelitis serum and antistreptococcus poliomyelitic serum of Rosenow are capable of neutralizing the virus of poliomyelitis. More complete with the human convalescent serum. (2) Monkeys can be immunized against an active virus of poliomyelitis by human convalescent poliomyelitis serum and antistreptococcic poliomyelitis serum of Rosenow. More complete with human convalescent serum. Does not last over a six-month period. (3) Human convalescent serum and antistreptococcic poliomyelitis serum of Rosenow are both highly specific in the treatment of acute infantile paralysis. Human convalescent serum more potent. Better results obtained when serum is given early, although recovery is noted even 48 hours after definite paralysis is evidenced and serum treatment started at that time.

A claim for specific serum has recently been made. Should this prove correct the

above principle of diagnosis and treatment have the same bearing.

It was not our aim to study these cases with a view to lauding serum treatment or spinal drainage, but to allow the results to speak for themselves.

Conclusions:—1. Early diagnosis, before paralysis, is usually very difficult and often marked by other cerebro spinal affections.

2. A careful study of the blood and lumbar puncture as outlined is essential for early recognition.

3. Cases treated with spinal drainage and Rosenow serum intramuscularly, show a more rapid recovery and the paralysis not so profound and extensive.

4. For the best results: (a) strict isolation, (b) early and repeated spinal drainage to keep the abnormal pressure down, (c) serum, either human or immunized horse serum of Rosenow should be given directly after the spinal drainage.

Please bear in mind these conclusions are drawn only to the application of our own work. I am not proclaiming a certain cure, but do sincerely believe that the above principle of treatment is our best hope in the present light on the subject.

723 Mayo Building

REPORT OF A CASE OF TULAREMIA

W. H. LIVERMORE, M.D.
CHICKASHA

As I have been unable to find records of any cases of Tularemia being reported in Oklahoma and only a few being reported in the United States, I feel justified in reporting this case.

Tularemia is an infectious disease due to *Bacterium Tularensis* and is transmitted to man by the bite of an infected insect or tick, or by self inoculation, or by eating the meat of an infected animal, especially the rabbit.

Mr. M., admitted to the Chickasha Hospital August 25th, 1927, complaining of an increase in the size of his abdomen which interfered with respiration.

History of Illness:—On Thursday, March 3rd, 1927, the patient was dressing a rabbit and he accidentally pricked his left index finger with a piece of the rabbit's bone. Three days later, (Saturday), he suddenly took sick with severe headache.

body pains and high fever. He was delirious for several days. About one week from the time that he pricked his finger a small reddish papule developed at the site of the injury. This finally "broke down" and was opened and a small quantity of greyish-yellow pus escaped. The lymph glands of the left arm enlarged and became very tender and painful, as did the axillary lymph glands. One by one these "broke down" and had to be opened. All contained greyish-yellow pus and they finally healed, leaving small white scars.

The patient's wife ate some of the cooked rabbit and she, too, became ill and was in bed for about a month. Her symptoms were identical with those of her husband, namely body pains, chills and fever, but she did not have any glandular involvement.

Part of the rabbit was given to the patient's dog to eat. About four days later the dog "went crazy" and had to be killed. No examination of the dead animal was made.

The patient has been ill ever since. Complaints of weakness, dull pains all over the body, fever and an increase in the size of his abdomen, which interferes with respiration.

Examination of the patient reveals a male about 45 years of age. He does not appear acutely ill. Physical examination is practically negative with the exception of a pendulous abdomen which contains fluid and a very small liver.

A trocar was introduced into the peritoneal cavity and about one gallon of cloudy, straw-colored fluid was withdrawn. A specimen of this was sent to the Medical Arts Laboratory with instructions to inoculate a rabbit with some of the fluid. Rabbit was injected with fluid 5:00 P. M., August 26th, died 9:30 A. M., August 30th. Autopsy showed that the spleen contained multiple nodules, almost microscopic in size. This is a typical case of Tularemia in a rabbit.

This man presents a typical case of Tularemia with marked liver changes and ascites. The liver is often affected in Tularemia and in this case a cirrhosis must have developed.

Clinicians in the Southern and Southwestern states should always bear in mind the possibility of Tularemia in a case which has a history of possible infection from rabbits and a sudden onset with body pains, headache and fever and some-

times enlarged lymph glands. Glandular fever, anthrax and typhoid fever have been mistaken for Tularemia, but only when a knowledge of the disease was lacking, or before sufficient laboratory tests had been made.

The clinician should bear in mind the following:

(1) History of having eaten or dressed a rabbit or having been bitten by a tick or fly.

(2) A primary lesion at the site of the injury, followed by glandular enlargements in the region of the primary lesion.

The treatment up to the present has been only symptomatic as no specific has been found. More work should be done on this disease and this can only be accomplished when more cases are found and diagnosed.

HORMONES

In the work of metabolism the hormones contributed by the various ductless glands—the endocrine chain—play the chief role. The hormone of the suprarenal gland is credited with two distinct functions; it stimulates the glycogenolytic function of the liver or duplicates the effect of such sympathetic system of nerves or duplicates the effect of such stimulation on the body.

This hormone is known among physicians everywhere as Adrenalin. It is the first hormone ever isolated from any of the glands of internal secretion. Parke, Davis and Co., who discovered it on the advent of the twentieth century, gave it the name, Adrenalin, signifying its derivation from the adrenal or suprarenal glands.

In order to make sure of obtaining the original product, physicians are advised to designate it by its original name—Adrenalin.

STANDARDS IN ROENTGENOLOGY

P. M. Hickey, Ann Arbor, Mich. (Journal A. M. A., September 3, 1927), pleads for greater uniformity in teaching roentgenology to undergraduate students; and that roentgenologists make a determined effort to require a higher standard of qualifications in those practicing this specialty; that a more uniform type of roentgen-ray reports be established in clinics and hospitals, and that a standard nomenclature be adopted for the purpose of clarifying the literature.

FURTHER EXPERIMENTAL STUDIES IN CHOLECYSTOGRAPHY

Large doses of the dye were administered by Julius Friedenwald, Maurice Feldman and Francis X. Kearney, Baltimore (Journal A. M. A., July 16, 1927), by mouth and directly into various parts of the small bowel at frequent intervals. From these experiments it is evident that when tetraiodophenolphthalein is administered orally for purposes of cholecystography, even when given in massive doses, it does not produce degenerative or necrotic changes in the liver or kidneys.

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DR. CLAUDE A. THOMPSON.....Editor-in-Chief
Barnes Building, Muskogee, Okla.

DR. P. P. NESBITT.....Associate Editor
Palace Building, Tulsa, Okla.

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Failure to receive The Journal should call for immediate notification of the editor, Barnes Building, Muskogee, Oklahoma.

Local news of possible interest to the medical profession, notes on removals, changes in address, birth, deaths and weddings will be gratefully received.

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EDITORIAL

CANCER CONTROL

Perhaps the most authoritative collection of opinion ever assembled upon the subject of cancer in its various aspects is to be found in the Report of the International Symposium on Cancer, held at Lake Mohonk, N. Y., September 1926, and just issued.

Professor T. Marie, Toulouse, reporting the conditions at the Cancer Center, there states that, of those investigated, it is shown that 30 per cent are hopelessly incurable. Forty per cent are already in a

condition in which generalization has become more or less advanced, and against which we struggle only feebly when we employ powerful means of action to obtain improvement or, sometimes "(but not often), a particularly difficult cure.

Finally, barely 30 per cent arrive in conditions that are favorable for effective treatment.

Dr. Howard Lilienthal questioned what Marie termed "cures by radium," to which he rejoined that he referred to early cases and cases of localized cancer. He offered little hope, if any, for advanced cases.

Dr. Robert Greenough, Boston surgeon, summing up his opinions stated that it was not a question of partisans advocating this or that method of treatment, but rather a judicial appraisal that is needed of the advantages to the patient and application to the individual case of the method which will give the best results, and that the best interests of the patient demand that all effective methods be made available, so that a well considered combination of methods may give the best chance of prolongation of life and relief of symptoms. As a surgeon, fully appreciative of the effects of surgery alone, the various forms of radium and X-ray treatment, and the combined methods, it is his conclusion that the rule is that those receiving the combination of both methods have a better chance, and if not cured, have their lives prolonged.

Professor Claude Regaud, Paris, sounded a warning of the danger on the part of both layman and physician, in many instances, who, noting that radiotherapy, leaving the treated organ, in appearance, at least, unharmed, wrongly supposed that the treatment by rays could be supplemented or later done over again several times in case of failure. Terming this a "fatal error," he states that dosage of rays sufficiently large to be curative, can almost never be given a second time in the same region. "The first radiologic treatment, like the first surgical operation on a cancer, has a character of fatality; it is decisive for cure or for death."

Dr. Crotti, Columbus, in his discussion outlined the system followed in their cancer clinic, as follows:

All superficial cancers are sent to the radiologist.

Carcinoma of the cervix is so considered, and treated with radium, in six years not a single hysterectomy has been performed for that condition, all are treated

by radium, with results as good, if not better, than when treated surgically.

Carcinoma of the fundus uteri and breast are essentially surgical, as well as deep-seated cancer, if in reach, are so treated, radiology being used as adjunct only. In cancer of the tongue, regardless of the method used, the results are bad.

Dr. Robert Bierich, Hamburg, noted his belief that the practical work of treating cancer by X-rays cannot substantially be improved, and if it is conceded that there are inoperable cases remaining cured for a long period of years, we are, on the other hand, acquainted with cases that react to X-raying less readily or in some parts not at all.

The widest publicity as to the perils of cancer is urged, and this to be most systematically and correctly carried out and stated. Time is the most important element, and, of course everyone is aware of the fact that the so-called precancerous condition should be promptly eradicated before we have cancer to deal with, bringing to us a case of must uncertain termination and the gravest possibilities for a fatal ending.

COUNTY SOCIETY MEETINGS

It is observed that many of the active county societies of our organization have already held their initial fall meeting, after the summer lull. This action is urged upon every society, regardless of its size. As we have pointed out before, medical meetings are beneficial, without reference to the number attending, and, if persisted in, they eventually become a helpful habit, bringing to the attendant a broader outlook, he, in turn contributing his ideas and improvements to his colleagues, all of which result in a gradual but certain improvement in all round fitness.

Every society in the State should now have an early meeting, plan the season's work, hold its annual election at the proper time, most usually in December, collect membership dues, and see to it that no worthy member lapse or lag behind simply for lack of interest or reminder. Members should all remember that January of each year is the month during which membership should be renewed and remitted to the State Secretary. Each member may help out greatly by seeing to it that his dues are attended to early, thus aiding his local secretary as well as lessening the chances of error and confusion as to membership.

Editorial Notes — Personal and General

DR. A. R. HOLMES, Henryetta, has moved to Ponca City.

DR. FRANK A. HOWELL, Okmulgee, has resigned as City Physician.

DR. J. D. HERRINGTON, Cushing, has been appointed health officer for Payne County.

DR. W. P. FITE, Muskogee, attended the Detroit meeting of the American College of Surgeons in October.

DR. HUGH SCOTT, Muskogee, attended the American Hospital Association meeting at Minneapolis in October.

DR. A. J. COLEY, Oklahoma City, has recovered from a severe attack of appendicitis, successfully undergoing operation.

GARFIELD COUNTY Medical Society met in Enid, September 29. Dr. Wade H. Sisler, Tulsa, was the speaker of the evening.

OKLAHOMA COUNTY tuberculosis hospital is being closed, the patients planning to return to their homes or enter the State Hospital at Clinton.

DRS. W. W. RUCKS and JOE T. MARTIN, Oklahoma City, have been named to represent Oklahoma County Medical Society upon the Board of Health.

WOODS COUNTY MEDICAL Society met at Alva, September 30th. Dr. Ray M. Balyeat, Oklahoma City, delivered an illustrated address upon "Wind Borne Diseases."

DRS. I. B. and IRA B. OLDHAM, Jr., Muskogee, are erecting a medical and surgical clinic. Space is provided for waiting room, four private offices with consultation rooms. Dr. I. C. Wolfe is associated in the undertaking.

DR. P. S. MITCHELL has turned his practice, including Railroad, Oil Company, and general practice, over to his son, Dr. Wade C. Mitchell, at Yale, Oklahoma, and has located at Sulphur, Oklahoma, specializing in the G.U. work.

OKLAHOMA COUNTY COMMISSIONERS are planning the erection of a new county hospital, to cost \$25,000.00, in order to care for indigent and needy patients now cared for by other institutions.

PONCA CITY opened a new hospital, the Grand Avenue, recently. Dr. A. S. Nuckols is Chief, Dr. George H. Nieman, Chief of Surgery, Dr. L. C. Vance, Chief of Medicine and Dr. Ira K. Cummings, Secretary of the Staff.

OKLAHOMA COUNTY Commissioners recently rejected a bill of the Clinton State Hospital for \$600.00 for care of tuberculosis patients. The move is based upon a recent court decision that the State and not the County must pay such bills.

DR. T. R. ROBERTS, Tulsa, is recuperating at Hot Springs after an operation for appendicitis.

DR. J. A. MORROW, Sallisaw, has moved to Henryetta, taking over the location of Dr. Holmes.

DR. and MRS. G. A. WALL, Tulsa, spent two weeks in Galveston and other Texas cities in September.

DR. J. E. HOLLIS, Bristow, sustained painful injuries from a fall while working about his farm in September.

DR. LEROY D. LONG and MISS MARY LOUISE CLYMER, Oklahoma City, were married September 15th.

DR. WINNIE SANGER, Oklahoma City, addressed the mothers and girls of Wewoka in September. Her subject was "Mothers and Girls."

THE MEDICAL ARTS Building, Tulsa, is rapidly nearing completion. It is an eleven story building. Ninety per cent of the space has been contracted for.

DR. D. W. GRIFFIN, Norman, Superintendent of the State Hospitals, reports that the institution is caring for 1600 patients, and is greatly overcrowded as the capacity is only 1,450.

DR. and MRS. HUBERT W. CALLAHAN, Tulsa, have returned from an extensive European trip, during which time England, Germany, France, Belgium, Switzerland and Italy were visited. Dr. Callahan attended clinics in several medical centers.

MRS. MABEL BASSETT, State Commissioner of Charities, has issued a statement to the effect that indigent sick should not be sent to Oklahoma City or State hospitals without first taking the matter up through the county superintendent of health and county commissioners, that recently, Oklahoma City has been flooded with such cases, who could have better been left at home for treatment. Tuberculosis cases should not be sent direct to sanitariums; venereal cases should be treated at home, unless they are provided with means of isolation and subsistence, while undergoing treatment at the clinics.

DR. FRED DORWART, Muskogee, precipitated a storm when, upon addressing the Muskogee Sector, W. C. T. U. upon the effects of alcohol, declared that its effects, in certain instances, were greatly exaggerated, that a periodic drinker was not in as much danger as one who tipsles regularly, and that in any event, overeating was also a danger, just as dangerous. Now the ladies say they will not "play" with him any more, that they want some one to speak to (or for) them who is with them. The doctor suggests that he thought they wanted an address upon alcohol from a scientific standpoint. He did not know "they wanted the cards stacked."

EYE, EAR, NOSE and THROAT

Edited by Jas. C. Braswell, M. D.
726 Mayo Bldg., Tulsa

Oral Lesions Due To Vincent's Angina: What Every Physician and Dentist Should Know About Its Recognition and Treatment, Bloodgood, J. C.; J. Am. M. Assn., 1927, LXXXIII, 1142.

Bloodgood is of the opinion that the occurrence of Vincent's angina is increasing and that the increase is due to or associated with poor living conditions.

In the treatment, he has had excellent results from the use of sodium perborate. A thick paste of the chemically pure salt is made with water and spread over all of the teeth with the fingers. Any red or ulcerated areas not around the teeth are treated in the same way. The patient holds this paste in his mouth for about five minutes. During this time it foams as a result of oxidation. The mouth is then rinsed with warm water.

In the author's opinion it is a mistake to allow patients to do this themselves until they are thoroughly trained, and by the time they are trained the lesion is usually cured. If the treatment is given too frequently it causes irritation. When the condition involves the entire oral cavity, extending to the fauces and pharynx, the patient should gargle with a thinner solution of the perborate two or three times a day. The more extensive the lesion and the more ulcerated the areas, the longer the time required for a cure.

The Effects of Tonsillectomy on the Acute Attack and Recurrence of Rheumatic Fever, Robey, W. H., and Freedman, L. M.; Med. Clin. N. Am., 1927, X, 1103.

Robey and Freedman are of the opinion that complete enucleation of the tonsils is the best preventive of rheumatic fever and therefore of rheumatic heart disease. A history of repeated sore throat is of more importance than tonsils which suggest disease by their appearance. Tonsillectomy is indicated by a history of repeated sore throat even when the tonsils appear normal. When the tonsils are diseased they should be removed even in the absence of a history of sore throat.

Tonsillectomy is a major operation and should be performed only by persons duly qualified by training and experience. An incomplete tonsillectomy leaves the patient in a dangerous condition as tonsil snags are often as dangerous as the entire tonsil.

The theory that when rheumatic heart disease appears after tonsillectomy the tonsillectomy failed to prevent it is erroneous. Rheumatic heart disease may not manifest itself until three or four years after an attack of tonsillitis or rheumatic fever. Moreover, the mere fact that tonsillectomy was eventually performed indicated the necessity for it, and the delay of the operation may have made the cardiac damage possible. On the other hand, even a late tonsillectomy will often prevent subsequent attacks and damage to the heart.

The prompt subsidence of fever and joint symptoms following tonsillectomy in cases of acute rheumatic fever has led to the more fre-

quent performance of the operation as soon as sufficient study has proved the tonsils to be the port of entry of the infection. As operation during the height of the febrile attack has not proved disastrous, it will diminish the possibilities of cardiac involvement.

Acute Infections of the Nasopharynx and Its Adnexa in Infancy and Early Childhood, Morse, J. L.: Med. Clin. N. Am., 1927, X, 1143.

Acute infections of the nasopharynx and its adnexa occur often in childhood and are frequently the cause of death. The treatment is primarily preventive, consisting in the removal of adenoids, regulation of the patient's habits to diminish the vulnerability of the mucous membrane of the nose and nasopharynx, the prevention of exposure to contagion, isolation of the patient and his confinement to bed for two or three days, and simple local treatment, usually with the silver salts. If these measures are taken, babies and children will seldom have acute nasopharyngitis and therefore will seldom develop complications.

The complications are ethmoiditis, inflammations of the frontal and maxillary sinuses (rare), otitis media (frequent), mastoiditis following otitis media, thrombosis of the lateral sinus following mastoiditis, and meningitis. Proper treatment of these complications will reduce their severity.

An Unlearnable Prism Test For Suspected Malingering, Schild, E. H.; Am. J. Ophth., 1926, 3 s. IX, 741.

The prism used in the test described by Schild is a small piece of rectangular glass measuring about one by two inches, one half of which is a rather thick plano and near the center tapers off to a prism of five degrees for the other half. It is very important that the base line of the prism which runs across the middle of the glass should be as sharp as possible to make an abrupt change to the prism side.

A suitable test object is provided. Ordinarily any small bright object against a plain background will do except an electric light bulb or other bright light. A small white visiting card is best.

With this glass one may produce the effect of either a plano, a double prism, or a single five-degree prism, depending upon the way it is held. If it is held so that the prism end is up and the dividing line is just above the pupillary border, the view will be through the plano part. This is Position I. By lowering it so that the dividing line runs midway across the pupil, the effect of a double prism is obtained. This is Position II. Lowering it again so that the dividing line is below the edge of the pupil gives the effect of a single five-degree prism with single image displaced upward. This is Position III. The shifting from Position II to Position III is the critical stage of the test and must be done at the moment when the subject has both eyes open and his attention distracted so that he will not notice the change.

The examination deals entirely with the good eye. If the patient shows signs of memorizing his replies, the position of the glass must be secretly reversed.

**BACTERIOLOGY, PATHOLOGY
and PUBLIC HEALTH**

Edited by Drs. L. A. Turley and Gayf ee
Ellison, Norman, Oklahoma

Treatment of Acute Poleomyelitis With Poleomyelitis Antistreptococcus Serum, E. C. Rose-now and Allen C. Nickle, American Journal of Diseases of Children: 33: 27-49—(Jan.) 1927

A serum was used from horses immunized by the intravenous injection of increasing amounts of dead and living mixed cultures of streptococci isolated from patients with acute poliomyelitis. Great care was used in selecting the strains of streptococci for immunization. Only such as were typical from a morphological and cultural standpoint and in addition were agglutinated by heterologous serums or whose extract gave a specific precipitine reaction and which produced flaccid paralysis in rabbits when inoculated intracerebrally were used.

The immunization of the horses required about six months. Intravenous injections were made into the jugular vein, beginning with small doses of cultures for three successive days, then an interval of four days. After that, increasing doses of mixed cultures were injected once a week. The number of bacteria was gradually increased from 25 to 2,000,000,000,000 organisms.

The serums of individual bleedings and of the mixture of sera were proved sterile by aerobic and anaerobic culture. Besides being sterile the final mixture had to be nontoxic when injected intravenously into guinea pigs in amounts equivalent to about 500 cc. for adult persons.

In the treatment, the serum was used intramuscularly or intravenously as the inherent toxic effect of horse serum when given intraspinally precluded this method.

The average dosage was as follows:

Children up to two years of age 15 to 25 c.c. of serum; from two to five years, 20 to 30 c.c. of serum; from six to 12 years, 25 to 50 c.c. of serum; persons over 13 years, 50 to 75 c.c. of serum.

A return of fever and high pulse rate twenty-four hours after the initial drop and the return of symptoms referable to the central nervous system after a primary disappearance or diminution, or the persistence of these symptoms, were considered indications for more serum.

Of those cases where there was no apparent benefit, serum was discontinued after three to four injections, provided the temperature was normal. The serum was warmed to body temperature and injected at the rate of one c.c. per minute when used intravenously. When given intramuscularly, may be injected more rapidly. Injections were usually given 24 hours apart except in urgent cases when it was given at 12 hour intervals.

RESULTS OF TREATMENT

In 109 cases diagnosis was reasonably certain. Thirty-one patients were not paralyzed at the time of the first serum treatment, 25 had already developed slight and 53, either moderate or marked paralysis. Of the first group, one (3.3 per cent) died; of the second group, one (4 per cent); of the third group, 9 (17 per cent). Thus a total of 11 patients (10 per cent) died. The average amount of serum in the three groups was 41, 35, and 64 c.c. and the average

age of the patients was 9.4, 5.7, and 8.9 years. The average cell count of the spinal fluid for each cubic millimeter in 24 of the first group was 175; in 22 of the second group, 141; in 33 of the third group, 331. The average cell count in the fatal cases was 522, ranging from 180 to 1,056. The ages in the fatal cases ranged from 4 to 35 years, the average being 12.7 years. For various reasons it was felt that 4 of the patients should not be counted against the serum, hence there was a total of 105 patients who received serum in time and in sufficient amounts for it to act. 7 of whom died, giving a correct mortality rate of 6.6 per cent.

Of the 109 cases there was a noticeable change for the better within 24 hours. In 9 cases the symptoms had been present for 7 days before serum was administered. Of these, 5 of the patients appeared benefitted; 4 did not. There were no noticeable harmful results of the serum treatment. The earlier the serum was given after the attack the more striking the results. In those cases where early diagnosis and treatment was possible no apparent paralysis resulted.

A further study of 1,113 patients treated with serum and 278 controls representing cases to whom serum was not administered shows that with few exceptions the good effect from the use of the serum in each of the age groups was inversely proportional to the degree of involvement at the time of the first serum treatment, and that the mortality rate was consistently much lower in the treated than in the control group. In the 1,044 cases considered as adequately treated, 91 patients died, making the average corrected mortality rate only 8.7 per cent.

In 966 treated patients and 177 control cases the incidence and degree of residual paralysis was in direct proportion to the condition of the patient at the time when the serum was first given and the total average incapacity was far lower in the patients who received serum than in those who did not. Marked residual paralysis was noted in 15 per cent of the cases as against 28 per cent in the control group.

An estimate of the clinical effects of the serum was reported in 647 cases; early good effects in 74 per cent, doubtful effects in 26 per cent. No harmful effects were reported in any case. The incidence of apparently early beneficial results was greatest in the group that received serum before the onset of paralysis. Apparent benefit was derived by 76 (56 per cent) of the 136 patients with marked paralysis at the time of serum treatment, to whom the serum was given 7 days or more after the onset of symptoms.

UROLOGY and SYPHILIOLOGY

Edited by Rex Bolend, B.S., M.D.
1010 Medical Arts Building, Oklahoma City.

TRYPARSAMIDE IN ACUTE LEUTIC MENINGITIS

Dr. E. R. Smith, Indianapolis, in the American Journal of Syphilis, reports nine cases of acute leutic meningitis treated with tryparsamide with no untoward results and no contra-indications noted. All cases were promptly relieved of the distressing symptoms, especially headache and photophobia.

LATENT CHRONIC PROSTATITIS

In Journal d'Urologie Medicale et Chirurgie, Perrin states that he has treated four cases in which chronic inflammation of the prostate was not revealed either by functional symptoms or by urethroscopic examination. In the latent forms of prostatitis, the lesions are located principally in the interstitial tissue. It happened that this form was observed more frequently than the prostaticorrheal form. Slight pain in the perineum or urethra, the appearance of a drop of pus in the urethral orifice, sometimes the presence of orchepididymitis, suggest the diagnosis. The diagnosis is confirmed only in the course of treatment. The treatment consists in digital massage of the prostate and the vesicles, repeated three times a week. Each treatment lasts from five to six minutes; it is preceded by urethrovocal irrigation with an antiseptic solution. The massage is supplemented by electric effluvation on alternate days. An electrode is placed in the rectum. In three or four weeks a cure takes place. Recurrences, according to the author, are unknown.

THE X-RAY IN GENITO-URINARY PROBLEMS

E. C. Koenig (Radiology, July, 1927) points out that the genito-urinary problems calling for X-ray assistance fall under five groups as to symptomatology: (1) Pain in or near the affected organ; (2) Disturbances or urination with or without pus or blood; (3) Urethral discharge with or without pain or discomfort around the genitals; (4) Constitutional disturbances from renal insufficiency due frequently to prostatic or other obstructions at the vesical neck or to bilateral renal lesions, as calculus, etc.; (5) Sexual disorders.

The X-ray will prove of assistance, therefore, in:

1. Infections of non-tuberculous type; size and shape of renal pelves and calyces may give a diagnostic pyelogram.
2. Perinephritic abscess may be demonstrated by pyelogram in cases in which the abscess communicates with pelvis or calyces.
3. Chronic pyelonephritis may give a diagnostic pyelogram.
4. Renal tuberculosis is frequently demonstrated by a characteristic pyelogram.
5. Calculus is practically always shown, with only a small percentage of error.
6. Ptosis of the kidney can be proven by X-ray.
7. Hydronephrosis and pyonephrosis give characteristic pyelograms showing marked enlargement or distortion of pelvis and calyces.

Renal tumor may be demonstrated when the kidney substance is so distorted or invaded as to change the outline of pelvis and calyces.

In bladder conditions (1) final results of a chronic infection may give an abnormal cystogram. (2) Stone is usually demonstrated. (3) Tumor may give a characteristic cystogram with irregular outline. (4) Adenoma of the prostate gives a deformity rather clean-cut in outline other than irregular, as in the case of growth of malignant type.

STRICTURE OF THE URETER

In the Medical Times for July, Pugh says an interesting point which has caused no little discussion during the past year is that of stricture of the ureter and its relation to stone formation.

Does stone cause the stricture or may the stricture not cause the stone? To the former, the author says, that he can state positively that a stone descending from the kidney and lodging at some point in the ureter would, of course, obstruct it, but that does not spell stricture. On the other hand, the author has been thoroughly convinced not only by the work of Hunner but his own researches that stricture does produce stone. Wherever there is urinary stasis there is the potential nucleus of a stone. In urethral obstruction, prostatic hypertrophy, vesical diverticula, dissecting trigone, etc., stones are quite common. It is a noteworthy fact that most of these stones occurring in urinary stasis are of the phosphatic type. In a number of cases of ureteral calculi which, in the author's opinion, were due to stricture, all the stones were phosphatic. In several of these cases ureterograms and pyelograms have several times failed to show stones, while at a subsequent date a stone is discovered at or close to the site of the stricture. There is room for research in this problem, says the author. The frequency with which bilateral ureteral stricture occurs and the large incidence of associated bilateral stones of phosphatic origin should give us pause. Also of interest is the fact that ureteral stones are found around the so-called common sites of stricture. It is said that in these cases a little experience with the wax tip bougies will always bring out stricture. The author does not vouch for this statement. He says that it is reasonable to suppose that urinary calculi occur after acute infections similar to the formation of biliary calculi as noted by Rosenow and Neisser, but their occurrence does not seem to be as common as the occurrence of biliary calculi. The ability of the kidney to throw off hematogenous infectious material is astounding, as is readily noted in such cases as typhoid. In this connection the author desires to call the attention of the reader to the fact that in these days of careful investigation it is unthinkable to operate for renal stone without a thorough exploration of both ureters for stricture. The author believes that this procedure, by establishing good drainage, will save many kidneys and repeated nephrotomies.

CLIPPINGS FROM THE UROLOGIC AND CUTANEOUS REVIEW

Nephrotics are prone to develop pneumococcal peritonitis after surgical operations.

In cystitis undue distension of the inflamed organ by irrigations will aggravate the condition.

Most prostates suffer from a chronic nephritis. The latter always involves the heart.

Never rely on one clamp or on one set of ligatures in dealing with the renal pedicle in nephrectomies.

The attempt to cure a cystitis without dilatation of concomitant urethral strictures will be futile.

The best anodyne in painful cystitis is the injection of small amounts of a ten per cent iodoform oil emulsion.

The cardiac condition and renal elimination are the most important items in qualifying a prostatic as a surgical risk.

Operations for varicocele without high resection of the veins and reconstruction of the inguinal canal will fail to bring about permanent relief.

The success of prostatectomy depends not only on the correct technique of the operation but also upon the proper conditioning of the patient.

In gonorrheal epididymitis the early administration of foreign proteins by intramuscular or intravenous injection and medical diathermy, as a rule, succeed in aborting the process.

In acute purulent nephritis do not operate during the acme of the febrile attack. Wait for the following period of subsidence. The local and general immunization gives better assurance for success.

Appearance of high temperature, especially if accompanied by chills and the fixation of the scrotal skin to the swelling, call for exposure of the epididymis and incision and drainage of the infiltrated areas in order to prevent occlusion of the vas.

TUBERCULOSIS

Edited by L. J. Moorman, M.D.
912 Medical Arts Bldg., Oklahoma City

The Place of Mental Hygiene In the Care of Tuberculosis Patients. R. S. Ahrens. The American Review of Tuberculosis. August, 1927.

"Nervousness secondary to baffling physical disability is very common, often in need of much more careful investigation than it has yet received." This is particularly true of tuberculosis patients who must make a tremendous mental readjustment to accommodate themselves to the many necessary changes in their mode of living. From an active life with a moderate illness of which he is often unaware for many years the tuberculosis patient must change to a life of rest and special care with the knowledge of an insidious disease and perhaps fear of imminent death. Besides changing from an active to a passive life for an indefinite length of time, giving up hopes, plans and position, he must adjust himself to institutional life, to worry or grief over leaving family and friends, to financial worry and to the problem of reestablishing himself after recovery. Many make a quick satisfactory adjustment. Those who do not should be carefully studied and made as comfortable as possible, mentally. It is often helpful in overcoming the fears and misunderstandings of a new patient to make him as fully acquainted as is possible with his own condition. Joking and "hazing" of new patients by older ones should be controlled as far as possible. Many of those patients failing to make an adjustment after a reasonable length of time need more personal help, some to be firmly guided, all to be reeducated and taught to think straight and face facts. Amusement and occupational therapy especially, are useful in diverting the mind and maintaining the self-respect.

Recent Advances In the Treatment of Tuberculosis. Ernest S. Mariette. *The American Review of Tuberculosis.* August, 1927.

Until late in the nineteenth century tuberculosis was considered hereditary and was generally treated by exercise. Dettweiler in Europe and Trudeau in this country first noticed the beneficial effects of rest on themselves and began to advocate rest instead of exercise as the main feature of the treatment of tuberculosis. After the discovery of the tubercle bacillus by Kock, in 1882, scientists began a steady search for a specific cure. So far, all specific substances as well as all drugs have failed in the treatment of this disease; all other measures also fail unless combined with rest. Prolonged bed rest continued long after all symptoms cease together with phrenicotomy, artificial pneumothorax or thoracoplasty today offers the greatest hope to these patients. Artificial pneumothorax remains the greatest contribution to pulmonary tuberculosis therapy since rest was introduced, giving as it does a great degree of local rest to the diseased lung as well as uniting cavity walls, reducing the diseased area and favoring the formation of fibrosis. Phrenicotomy offers a simple, easy and safe means of partially compressing the lung by paralyzing the diaphragm. It is most valuable as an aid in pneumothorax and thoracoplasty although alone, it frequently compresses the lung sufficiently to give great benefit to the patient. The advantages of artificial pneumothorax overshadow its dangers and disadvantages the greatest of which are air embolism, pleural shock and pleural effusions, the first two being rare and the latter very common. It usually renders the patient symptomless in a comparatively short time and frequently restores many to economic usefulness who would otherwise be dependent for many years. Thoracoplasty while a radical measure, offers hope to many patients for whom pneumothorax is impossible and is at present no greater surgical risk than any other major operation. The contralateral lung must be in really good condition, however, as it leaves a permanently functionless lung. Its chief dangers are the sudden squeezing out of much tuberculous material and the sudden increase in the load put upon the "good" lung. It naturally requires closest cooperation between physician and surgeon. Heliotherapy is highly successful in the treatment of extrapulmonary tuberculosis and is being used at present in a limited way in cases of pulmonary tuberculosis. Properly controlled it gives good results.

The Eradication of Tuberculosis, With Especial Reference to Its Early Diagnosis. F. Jessen; *The American Review of Tuberculosis.* August, 1927.

While tuberculosis has decreased all over the world because of the fight against it, the world war taught us that any lowering of living standards would be followed by an increase of this disease. In fighting it it is necessary to consider social conditions as well as the pathology of the disease. Prophylaxis divides itself into prevention of exposure to infection and guarding individual health. Everything that is done to improve general living, working and recreational conditions tends to lessen exposure to infection. It will not be controlled, however, until the general

population is under control with detection of new cases, treatment and isolation when necessary, practiced as is done with other infectious diseases. In regard to the treatment of the individual, diagnosis must be made much earlier than is now usual if he is to be saved to a useful life and prevented from becoming a source of infection. This will demand better medical training and an increased knowledge of the really early symptoms. The lungs should always be examined if the symptoms are at all suggestive of tuberculosis as all forms of the disease really start in the lungs and many primary changes may be demonstrated both clinically and radiographically. The term, "pre-tuberculous" should be avoided as the group of symptoms covered by this term are not a warning that there will be tuberculosis but a sign that it is already present. Among such early symptoms are a fine red injection of the borders of the eyelids, a fine red injection of one or both cheeks with very sharp borders (if this has a cyanotic tinge the disease is advanced), an atrophy of the trapezius muscle, neuritis of the muscles, the "thorax paralyticus," the round back commonly seen in children, ease of fatigue with sometimes a sensation of heat in the head and inability to concentrate, alteration of character, loss of weight, loss of hair, sometimes acne vulgaris or pyriasis, an anemic or yellow color when there is no anemia, cardiac disturbances, gastric and intestinal disturbances, general debility, profuse sweating under the arms without exertion, loss of strength, headache, general ill feeling, short, dry cough on slight exertion, sometimes dysmenorrhea and menorrhagia, slight elevation of temperature especially at noon, patients with bacilli in the sputum are not incipient cases, any of these symptoms should lead to a thorough examination of the lungs. Very slight changes in lung and breath sounds or in resistance are often highly significant and can frequently be confirmed and other pathological changes discovered by the X-ray. No one method should be relied on but all aids to diagnosis should be used. If evidence of intoxication is present, weight must be laid upon slightest clinical alteration. Fighting against manifest, often open tuberculosis, is not enough either for protection or cure—it must be diagnosed earlier if the struggle against it is to be effective.

ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M. D.
717 North Robinson St., Oklahoma City

Rupp, F.; A Simplified Operative Procedure For Habitual Dislocation of the Shoulder. (Ueber ein vereinfachtes Operationsverfahren bei habitueller Schulterluxation). *Deutsche Ztschr. f. Chir.*, 1926, CXCVIII, 70.

The intracapsular portion of the biceps tendon begins at the upper margin of the glenoid fossa and extends in an arched course over the head of the humerus. When the tendon becomes tense, the semicircular arch tends to become flattened when the arm is raised. This causes considerable pressure on the head of the joint which, under pathological conditions such as those present in habitual dislocation of the shoulder, may be sufficient to displace the head from the fossa.

The new operative procedure described by the author is based on these anatomical considerations and the findings of experiments performed

on cadavers. The sheath of the biceps is split in the sulcus and the tendon on each side is sutured with silk to the periosteum and bone. This results in functional exclusion of the intracapsular portion of the biceps tendon and the prevention of pressure on the head.

In the one case which has been operated upon in this manner there has been no recurrence of the dislocation for nine months.

Mackenzie, J. F.; A Simple Method of Treating Fractured Clavicle. Med. J., Australia, 1926, II, 485.

In the treatment of fractures of the clavicle, Mackenzie puts the patient to bed, brings the affected side to the edge of the bed, and allows the arm of the injured side to hang straight down toward the floor. This position is maintained for four hours. Then, for the remainder of the treatment, the patient is allowed to rest his elbow on a pillow on a chair beside the bed in an easy position but yet with some slight drag on the shoulder. Two cases are reported, one, that of a man 65 years of age and the other that of a young male adult. In both, the treatment gave immediate relief from the pain and an excellent result.

The author states that he has never had a failure with this method and has used it for years.

Harding, M. C.; Os Calcis Fractures; A New Method of Reduction; J. Bone and Joint Surg., 1926, VII, 720.

To effect the reduction of a fractured os calcis the posterior end of the heel must be drawn down so that the weight will be borne on the tuberosities and not on the fracture line, the anterior end of the heel must be pushed up to restore the arch, and the broadening of the heel must be corrected.

The knee is flexed over the end or side of the table and a sharp claw retractor is driven into the skin at the back of the heel. This gives traction at the most advantageous point. It is never necessary to cut the tendon of Achilles. Three points of counter pressure are provided. On a stool with a screw top, a triangular wooden wedge is placed and the stool screwed up until the wedge presses firmly into the foot at the calcaneocuboid joint. Harding then sharply bends the forefoot down with one hand while with the other he pulls down the retractor until as much correction is obtained as is desired.

In the next step of the procedure, a cabinet-maker's "D" clamp is applied to the sides of the os calcis, the pressure points being protected by felt or rubber, and the clamp is screwed in slowly until the width is the same as that of the opposite heel, which is tested by removing the clamp and applying it to the other heel. Pressure is made at several points for a short time. When the clamp is well screwed in, it may be used as a Thomas wrench.

Following the reduction, a plaster-of-Paris bandage is applied with the foot in the corrected position. If desired, the clamp and retractor may be left in place until this is done. The plaster is pressed firmly against the side of the heel while it is setting and the cast is left on for about three weeks. Full weight bearing is not allowed for three months. A felt arch is then used to give some support.

Fifteen cases of fracture of the os calcis have been treated by this method. In two of them the condition was bilateral. All of the patients

are now at work. The average time of disability was only five months.

BOOK REVIEWS

GETTING WELL AND STAYING WELL. A book for Tuberculous Patients, Public Health Nurses and Doctors, by John Potts, M.D., Ft. Worth, Texas, with an introduction by J. B. McKnight, M.D., Superintendent and Medical Director, Texas State Tuberculosis Sanatorium, Cloft 223 pages; Price \$2.00. C. V. Mosby Co., St. Louis, 1927.

This is a tersely written, very complete little volume which will prove of inestimable aid to the patient, nurse and physician dealing with the tuberculous patient. Its precepts and advice are based upon the modern conception of the care of the disease, which cannot be ignored by anyone if a cure is to be achieved.

EMERGENCIES OF A GENERAL PRACTICE. By the late Nathan Clark Morse, A.B., M.D., F.A.C.S.; Revised and Rewritten by Amos Watson Colcord, M.D., Surgeon, Carnegie Steel Company, Surgeon, Pennsylvania Railroad System; Ex-President, Association of Railway Surgeons, Pennsylvania Lines, East; Ex-Chairman, Health Service Section, National Safety Council; Member, Board of Directors, American Association Industrial Physicians and Surgeons, Second Edition, Profusely Illustrated, Cloth, 541 pages, Price, \$10.00; C. V. Mosby Company, St. Louis, 1927.

The well known and often appalling helplessness of the general practitioner when confronted by many of the urgent emergencies of a wide general practice were evidently in the author's mind when this work was in preparation. He has culled those aids from modern knowledge, which a wide experience has taught him to be prime necessities, if the general practitioner is to fill his part in the scheme of things to the credit of himself and with benefit to the patient. Quoting Carl Seiler, he says, "The real specialist is first a good all-round doctor, and a little more." One cannot but feel that the general practitioner is sending too much work to the specialist; that the good old family doctor is passing. The remedy lies in this same general practitioner—"learning to do many things better." If the teachings of the volume are studied and carefully followed by the practitioner, much unnecessary suffering, prolonged incapacity and mortality would be averted.

MINOR SURGERY. By Arthur E. Hertzler, M.D., F.A.C.S., Chief Surgeon, Halstead Hospital, and Victor E. Chesky, Chief Resident Surgeon, Halstead Hospital, with 438 Illustrations, Cloth, 568 pages; Price \$10.00, C. V. Mosby Co., St. Louis, 1927.

Dr. Hertzler is one of our best and most prolific writers upon surgical subjects. This work is prepared primarily to assist the dispensary student to understand what he sees in the outpatient clinic, but, it goes far beyond that in reality, for it covers so many subjects and in such concise manner that it will prove an aid to the busy practitioner and surgeon as well. It is full of the fine points which have grown to be so essential to the success of surgery as is now practiced by the modern physician and surgeon.

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THE MANAGEMENT OF ACUTE GONORRHEA IN THE MALE*

BY HENRY S. BROWNE, M.D.,
TULSA

A disease like gonorrhea, which is so prevalent among young men and which leads to such devastating complications and sequelae among women and to blindness in the new-born, and which is constantly being met with by all of us in our practice, no matter what our specialty may be, must be looked upon with more than the half-hearted tolerance with which it is too often regarded. It is a well-known but often overlooked fact, that acute gonorrhea in the male is a self-limited disease, which with usual care will get well in from one to two months, often in spite of treatment, rather than on account of it. Sometimes, only too infrequently, the patient will get well in from one to two weeks and we are then liable to give credit to some particular form of treatment rather than to the patient's exceptional resisting powers and to the lack of virulence of the organism.

Another thing to remember is that in spite of the hundreds of remedies which have been advanced in the treatment of gonorrhea, we as yet have no specific for this disease. This can be easily explained when you remember that the patient presents himself when he first notices a purulent urethral discharge, by which time the gonococci have burrowed and entrenched themselves in the deeper layers of the urethral mucous membrane where no injection can possibly reach them. The drugs we use in the strength we dare use them, only touch the surface; to use them in a strength sufficient to destroy the gonococci, would destroy the urethra also. Therefore, keeping the above facts in mind, when a patient presents himself with acute urethritis, he must be told at

the outset that he will probably have the disease for one or two months, that there is no quick, sure cure for it, and that what we aim to do is to keep him about his normal occupation and prevent, if possible, such serious complications as epididymitis, severe prostatitis and arthritis.

He is advised to drink at least one glass of water every hour and is given an alkaline mixture to render his urine less irritating. A light, easily digested diet, free from irritants, is prescribed. He is admonished to forego wine, women and work, or, in other words, to drink no alcohol, to avoid sexual excitement, and to engage in no heavy work or strenuous exercise. A hot sitz bath twice daily must be taken. This is good in the treatment of acute prostatitis and, therefore, is better in its prevention. The advantages and possibility of keeping the infection in the anterior urethra are thoroughly explained, and when a posterior urethritis is present or develops, just what complications are liable to occur. By doing this, the patient will be kept in fear of his disease and will not treat it lightly as he will do if not properly advised.

In regard to local treatment, I believe that the hand injection as used by the patient in the early stages, is productive of more harm than good. Not knowing exactly how to use a syringe, he is almost certain to force some of the solution and with it, infectious material, into the posterior urethra, thus producing a posterior urethritis, which we try to prevent. I, therefore, do not allow my patients to treat themselves until the third or fourth week, if the disease is well under control by that time.

The fact must never be lost sight of that gonorrhea must be handled with respect and that your duty to the patient is to bring him through the disease, if possible, without serious complications. This, I firmly believe, can be best done by carrying out the above general directions and by giving the patient one daily treatment at your office, at which time a mild, hot, anterior potassium permanganate irriga-

*Read before the section on Genito-Urinary Diseases, Dermatology and Radiology, Annual Meeting, Oklahoma State Medical Association, Muskogee, May, 1927.

tion is given followed by an anterior injection held in for five minutes, of a mild solution of one of the organic silver salts, acriflavin or mercurochrome. Great care is used not to force any fluid into the posterior urethra. Several preparations are used as an injection during the course of the disease in the belief that if one drug is used for too long a time, the gonococcus develops a tolerance to it. In acute posterior urethritis with dysuria and hematuria, absolute rest is, of course, necessary. I have never seen any harm from a daily permanganate irrigation as described above and the patient feels that you are doing something for him when he is most ill; and his morale is kept thus much higher than if you do absolutely nothing in this most trying phase of the disease. I have never been able to ascribe any benefit to the use of gonorrheal vaccines in the acute stage. Normal erections without pain or a sense of excess fullness, means that the inflammatory reaction has subsided. When there has been no discharge for a week or more, the urine is clear except for a few fine floating shreds, prostatic secretion is normal and there is no discharge following the passage of a large sound, the patient is discharged as cured.

In so short a space of time, only generalities can be touched upon but by adhering to the above general principles and always keeping the fact in mind that gonorrhea must be treated with respect, I have been able to keep the incidence of epididymitis in my cases under less than two per cent where the average incidence is 20 per cent.

THE DIAGNOSIS AND TREATMENT OF CHRONIC GONORRHEA AND SOME COMPLICATIONS IN THE MALE*

ELLIS MOORE, B.S.M.D.,
OKLAHOMA CITY

For many generations past the progress of mankind has been hampered by incurable cases of gonorrhea. I mean chronic gonorrhea and many of its complications. This is likely to continue for some time to come because these cases are not diagnosed and treated properly, this situation is due to two or more factors; the patient

carries out directions poorly or the doctor errs in doing his duty, sometimes both. There are many other things too numerous to mention that also enter into these causes.

History shows until fifty years ago there were sporadic attempts at treating gonorrhea, but usually the treatment was limited to internal medication. The patient was placed on a more or less rigid diet, purged and the different herbs and concoctions and balsamic remedies were fed to them in form of pills, drops, electuaries, decoctions and emulsions. Frequently the kidneys received injuries from which they did not always recover.

The results as to cure of gonorrhoea were prompt in some cases and lingering in others. Some patients were never cured. The reasons given by the physicians to explain the failures were transgression against diet, mode of living, sexual excitement and reinfection. These same excuses are still common. They have not changed much the last fifty years.

Patience and perseverance as well as great gentleness are the watchwords in the treatment of these cases. Solutions of silver nitrate, one-fourth to one per cent, are excellent. I also find that one per cent mercurochrome locally and intravenously materially aids in clearing up these cases. Mercurophen is another solution I find very potent. It is stainless and very germicidal in 1:5000 solution injected into the urethra. In general, this embarrassing yet common infection apparently behaves as it has always behaved, according to the habits and mode of living of the patient. The pathology and morphology is about the same.

It is not the purpose of this paper to advocate any special brand of treatment or to announce something new in the eradication of the disease. I merely want to plead for gentleness and perseverance with these chronic gonorrhea carriers as well as diligence in examination and treatment. Above all things, I would hope for greater effort and thought from the doctors in prophylaxis when he is treating early gonorrhea that it would not graduate into chronic gonorrhea. There are many urethral antiseptics, such as argyrol, protargol, silvol, neo-silvol, mercurochrome, that are deadly to the gonorrhea germ if placed in contact with them. The main trouble seems to be to locate and clean out the hiding places.

*Read before the Section on Genito-Urinary Diseases, Dermatology and Radiology, Annual Meeting Oklahoma State Medical Association, Muskogee, May, 1927.

After it passes the acute stage and enters the ninth week chronic stage we will find certain areas or localities of the infection. This may extend throughout the entire urethra, as an infected lacunae or gland confined to areas here and there in the posterior or anterior urethra. Sometimes the prostate only, harbors the infection. However, it may enter the ejaculatory ducts and lymphatics to extend further into the cord and seminal vesicles as well as to the epididymes. We do not have a generalized fulminating process as found in early or exacerbated types.

Prevention of the chronic stage of gonorrhea is the salvation of a great many cases. If we can properly treat, cooperate and cure the early case we have succeeded in preventing the endless job. So it behooves each of us, every doctor who treats gonorrhea, to do our best in examining and diagnosing and treating such cases to prevent deep extension. I know the per cent of extension is high, and realize some are unaccounted for, but there are causes and we should overcome them. Gentleness should be our watchword at all times especially with our treatment of highly inflamed cases of acute gonorrhea.

I know of many doctors today who will glance at a case, casually observe pus or muco-purulent discharge from the meatus and immediately exclaim, "Oh, it is only a little dose of clap. I'll give you a little medicine and you will be O K in a few days." Seldom does this type doctor take the time to make a stain, and use his dusty microscope. Neither does he attempt to learn whether this is an acute case from an outside source or an acute exacerbation of a chronic infection. Another type doctor is one who is rough and injurious. Regardless of the condition he plows down the urethra causing more harm than good. No wonder the statement. "Once gonorrhea, always gonorrhea." This is true with this type of treatment from this kind of doctor.

The complications to be mentioned in this paper furnish a focus inaccessible to the urethral injections or irrigations. In any reasonably large series of cases there will always be a certain per cent complicated practically from the start. The failure to secure a quick cure in these should not then be properly chargeable to the particular drug used, but rather to the surgeon's failure to get that drug in contact with the infected tissue. The treatment of gonorrhea in practically any stage of

chronicity should be based upon a recognition of the same principle. An intelligent and well planned attack will always result in cure. It is my purpose in the following paragraphs to consider the more common of these complications and their treatment.

The complications about to be mentioned comprise in each case infection of certain definite anatomical structures. They will be considered in the order in which they may be reached by the infection. First will be Littre's glands and the crypts of Morgagni. Infection of these glandular recesses in the mucosa of the anterior urethra is, I am convinced, seldom recognized during the acute stage. Occasionally it is recognized by the finding of a small tender nodule somewhere along the floor of the anterior urethra. If located on the roof of the urethra palpation will not reveal the small mass. One or several of these glands may be infected at a given time, and unless their presence is recognized they make for a discouraging chronicity of discharge, irritating alike to patient and physician.

In my own work I suspect their presence when the discharge from an anterior urethra persists beyond the time it should reasonably take for a simple surface infection to subside. I do not hesitate to look for them with a urethroscope, and when found, to destroy them with a cautery. I have never had occasion to regret such treatment, and I know I have cut short many an otherwise persistent discharge by such therapy. Urethral medication is, of course, continued during the ten days to two weeks, required for healing of the cauterized spot, at the end of which time, if there are no other complicating foci, the patient will be free of discharge.

If a patient first presents himself with a chronic urethritis and infection of Littre's glands or Morgagni's crypts or both is diagnosed, treatment should begin with dilatation and irrigations, reserving the cautery for such lesions as do not yield to the dilatations.

Passing up the urethra we next encounter as a possible site of infection, Cowper's glands, with their ducts opening into the urethra on the floor of the bulb just in front of the cut off muscle. One or both of these may become infected. When this is the case we will find a small, firm, swelling of the gland, only slightly painful at worst. Pressure on the gland will cause the reappearance of gonococcus-laden pus

in a freshly washed urethra, providing the duct be patent. Treatment consists of regular massage of the gland, application of heat, rest in bed, antipyretics and anodynes by mouth as needed. Some advise surgery.

Passing the cut off muscle we enter a field rich in possibilities for complications. We can probably say that the least important of these, though it is by no means unimportant, would be infection of the utricle. I have never made a diagnosis of infection here in the acute stage, though it seems reasonable to suppose that it would be of fairly regular occurrence during acute posterior urethritis. Infection here is occasionally diagnosed at the examination of patient complaining of chronic gonorrhea. Such diagnosis can only be made with the urethroscope and then depends upon finding the opening of this little cavity inflamed, edematous, and possibly fringed with granulations.

Treatment is simple and consists in sterilizing the cavity by a few injections of two per cent silver nitrate. It is often astonishing to note the improvement following this simple procedure in a urethritis which has failed to yield to every other plan of treatment.

On the verumontanum close to each side of the utricle, open the ejaculatory ducts. They occasionally open within the cavity of the utricle itself. Ascending up these ducts the gonococci may reach the seminal vesicles. The classical picture of acute infection here is heavy pain in the perineum and rectum, pain in the lower abdomen, fever and prostration. The pain may closely imitate that of acute appendicitis or beginning hernia and the patient may lose his appetite and suffer nausea and vomiting. He will tell you that his urethral discharge, which was profuse has markedly diminished, and on rectal examination you will find the vesicle or vesicles markedly enlarged, firm, hot and extremely painful.

In any acute urethritis, if the first four or five ounces of urine passed are not sufficient to wash the urethra free of pus, leaving the remaining urine clear, there is reason to suspect the presence of chronic gonorrhea. If all the urine passed be clouded with pus there is certainly a posterior urethritis present. When posterior urethritis is certainly or even probably present, frequent rectal examinations are indicated, that we may detect the first

swelling or tenderness of the vesicles heralding an acute vesiculitis.

The treatment often advised consists of rest, heat through hot rectal douches, and also a discontinuance of local treatment to the urethra. With such expectant or negative therapy, however, I cannot agree. Nor is the recommendation of aggressive attack upon the infection at all original. Bellfield, years ago, advocated injecting the seminal vesicles in chronic infection, and in 1922 extended this recommendation to acute infection, reporting a series of cases in proof of the efficacy of the method.

Vasotomy necessarily lays the patient up for a few days, during which time perforce local treatment is interrupted. As soon, however, as the patient can come to the office again—usually by the third day—urethral treatment is resumed. I can see no good and sufficient reason for neglecting one infected mucous surface because another is being treated.

Chronic vesiculitis may be diagnosed by varying degrees of abnormality and of tenderness of the vesicles as felt per rectum, and may or not be proven in one way by the ability of the physician to massage purulent or in varying degrees pathological vesicle contents out of the vesicles and ducts and through the urethra. When found, such contents, of course, settle the diagnosis. If, however, the ejaculatory ducts be occluded, massage may yield no such material. Nevertheless, in either case urethroscopy will reveal the inflamed verumontanum which has been so frequently called the mirror of the seminal vesicles; and we will see edema, inflammation, granulation tissue, even polypi, singular and in various combinations.

Treatment consists in irrigation of the urethra combined with massage of the vesicles, deep instillations of weak silver solutions aimed at the inflammation around the duct orifices or better, direct applications of strong silver solutions or the cautery through the urethroscope to the pathology here, and Bellfield's operation of vasotomy. This operation filling the chronically infected vesicle with a silver solution through the vas, it is claimed always yields good results if other chronic foci also receive the attention which is their due.

Vesiculectomy, most strongly advocated in this country by Fuller, is a major surgical operation apparently in magnitude out of all proportion to the seriousness of

the average vesicular infection. In severe vesicular infection endangering general health and resisting all other treatment, it is, of course, logical and justifiable.

Descending along the vas from the vesicle to the epididymis the gonococcus produces epididymitis, the symptoms and usual course of which are familiar to every physician. Regularly accepted treatment consists of rest in bed for the patient, rest and elevation by suspension of the part. Some advise the application of a medication to the scrotum. Of all things I have tried locally, ichthyol dressings and adhesive poultices have given me the best results. As the patient usually has a fever some antipyretic is given, and local urethral treatment is suspended. A more aggressive treatment is the operation of epididymotomy. Many writers earnestly recommend it. I am convinced that it materially hastens the recovery and shortens disability. The only serious question would appear to be when it is indicated and when not. My own opinion is that the bedridden patient is the one to operate and the ambulatory patient the one to let alone.

However, as an epididymitis is always immediately preceded by and co-exists with a vesiculitis, it is puzzling to try to understand why the one should be treated and the other neglected. Vasotomy may be done through the same incision and at the same time as epididymotomy and the fever which falls fairly promptly after epididymotomy will fall still more promptly if vasotomy be done also. The whole force of surgical reasoning would seem to be against neglecting one out of two foci of infection. Yet in treating epididymitis, neglect of the vesicle is so extremely common as to be almost universal. This attitude is unfortunate. A wider recognition of the role played by vesicular infection and of the benefit to be derived from aggressive attack upon it is greatly to be desired. Less epididymitis and shorter disability when it does occur will then inevitably result. Chronic epididymitis is sometimes seen in the course of a chronic vesiculitis. I find it advisable to operate these cases.

Proximal to the verumontanum and on each side of it are arranged 30 to 40 very tiny openings. These are the orifices of the individual gland structures which in bulk go to make up the prostate gland. With so many openings, the passage of gonococci through any one of which may give rise to acute infection of a corresponding portion of the prostate, one readi-

ly sees why acute prostatitis of varying grades of severity is such an almost universal complication of chronic gonorrhea.

The symptoms of involvement of the prostate range, as in the case of the vesicles, from no subjective symptoms and the physical finding of moderate tenderness and swelling per rectum, to severe, heavy, aching pain in the perineum, stranguary with frequency, fever and prostration, with the rectal examination revealing a greatly swollen, hot and tender gland. The process may even go to abscess formation, with destruction of a considerable portion of the gland.

Treatment again includes rest, heat and antipyretics if necessary. The heat is applied with hot water bottles, hot sitz baths and hot rectal irrigations. Non-specific protein therapy applied by intramuscular injections of sterile milk is sometimes considered as helpful. As in any other complication, I think it a mistake to suspend urethral treatment. I always give such a patient daily hot irrigations and *very light* massage. I know that they do better than when they are given more severe treatment or left entirely alone.

Chronic prostatitis is one of the most common complications perpetuating chronic gonorrhea. The complication, in marked contrast to infection of the vesicles, is quite generally recognized by the profession as a whole. It is diagnosed by the finding of pathology per rectum and by the pathological appearance, gross and microscopic, of the prostatic secretion as obtained by massage.

Usual treatment is by routine and long continued irrigation, massage, instillation and dilatation. Such treatment will not, however, cure every case, and the reason will be at once apparent if resort be had to careful posterior urethroscopy. Among the various pathological conditions, revealed by this procedure two are deserving of special mention. One is the cystic dilatation of a little group of gland acini located on the superior wall of the urethra just posterior to the level of the verumontanum. Irrigation, instillation, and massage alike fail to reach these. They may usually be ruptured and their contents evacuated by far pushed dilatation with a Kollman dilator. Occasionally it may be necessary to open them by fulgurating or applying the actual cautery to their rather thick walls, before they can be evacuated and healing take place.

The other condition deserving of special mention is the presence of relatively large sinuses or pockets in the substance of the gland draining through very small openings into the urethra. The urethroscope enables us to see the discharge coming from the tiny opening and the cautery enables us to enlarge this opening. One will frequently be surprised at the extent of the cavity thus revealed. Proper drainage established through the enlarged opening plus proper medication of the cavity will lead to fairly prompt healing which could not have taken place under any other conceivable therapy.

The foregoing remarks cover rather briefly the more common complications of chronic gonorrhea and their treatment. There is not sufficient space in this paper to consider more remote ones, such as septicemia cystitis or kidney infection, nor those due to anatomical abnormalities.

From the above discussion, however, I wish in closing to bring before you two important lessons. One is that the standard universal treatment consists of urethral irrigations, massage, sound and deep instillations are often failures in the treatment of chronic gonorrhea and some of its complications. They may, indeed, keep the urethral inflammation under control while the complicating infection is getting well, and for this they should be used, but they will not cure the complication, which must either heal by itself or be attacked more directly.

The other lesson is, that as practically any of the complicating foci I have mentioned may become sealed off from the urethra and therefore, be latent, it behooves us not to be satisfied with the absence of discharge and a clear urine in appraising a cure, but to institute thorough and painstaking search for possible latent foci before telling a man he is cured and especially before advising him that he may safely marry. A great many times it would be better practice to do less treatment and manipulating. Therefore, as a final word, let me leave these thoughts with you.

1. Don't do anything to devitalize this very delicate mucosa upon which you must rely for cure.

2. Don't inject substances into the posterior urethra when only the anterior is infected.

3. Don't forget that a chronic discharge is often chronic gonorrhea. The case

should be diagnosed, the trouble located, then treated properly.

4. Don't forget that unskillful prostatic massage, heavy lifting, and sexual excitement or indulgence with a full bladder are the most common determining factors in complications—as epididymal involvement.

5. Don't think a clear urine means cure, for the gonococcus loves to colonize and lie dormant. It can be stirred to activity by roughness and it had better be thus located and treated to a cure than have someone else infected.

6. Don't forget that the utmost gentleness and judgment in the treatment of acute gonorrhea will obliterate chronic gonorrhea and that your best ally is an untraumatized mucous membrane with good drainage.

—o—

ROENTGEN RAY EXAMINATION OF THE URINARY TRACT*

E. C. WILSON, M.D.
OKLAHOMA CITY

Ordinarily the roentgenologist and urologist must use team work in the examination, for neither can do his part of the examination without the other being available to do his part.

In a well regulated medical center a roentgenologist's examination is hardly considered or attempted without the urologist, as it would be so incomplete that it would hardly be considered. However, when the examination is primarily intended for some other part of the body as the gastro-intestinal tract, enough information may be obtained about the urinary tract to make a positive diagnosis, but more often it suggests calling a urologist for a complete examination.

PYELOGRAPHY

Pyelography is a roentgen picture of the kidney when injected with a contrast media.

Sodium iodide in from 12 to 25 per cent solution is the best and sodium bromide, 25 per cent solution the next best contrast media. They are non-irritating, non-toxic, are freely soluble in water, can be kept indefinitely without even being kept in dark bottles, can be boiled, will flow

*Read before the section on Genito-Urinary Diseases, Dermatology and Radiology, Annual Meeting, Oklahoma State Medical Association, Muskogee, May, 1927.

through the smallest catheter, are transparent and will not stain linen, mixes readily with urine, and does not form metallic precipitates when they come in contact with the body secretions or any ordinary anesthetic and are inexpensive.

These qualities are appreciated after it is considered that pyelography was introduced in 1906 and 12 cases of death were reported from it by 1917. They, of course, were preceded by renal colic, general toxemia, fever, chills, haematuria, haematemesis, collapse, weak heart and death.

It is well to bear in mind that the opaque media may be taken by the blood into the general circulation and have the same physiological effect as though it had been given intravenously. The urine is secreted at about 60 m.m. pressure and if the contrast media is injected at a greater pressure it goes into the blood stream and if too great a pressure is used you may even have a rupture of the pelvis of the kidney, if the solution is extremely irritating it will not only cause colic but may even cause necrosis of the kidney.

Cameron, Lowsley, Braasch, Weld, Joseph, Lichtenberg, and Barreau have made extensive study of solutions of the salts of sodium, potassium, lithium, strontium, calcium, ammonia and thorium. Cameron went so far as to test the salts considering viscosity, osmotic pressure, local irritation, atomic weight, atomic number and absorption coefficient as well as extensive animal experimentation and the use of sodium iodide which proved to be best suited in actual urological examination on man.

Joseph found a 25 per cent solution of lithium iodide the most opaque and non-irritating.

No work would be complete without the warning that the solutions of potassium salts are irritating and toxic and all the salts studied are either irritating, toxic or lacked opaqueness while ammonium bromide causes a complete necrosis of the kidney. Collargol, argyrol, pyelon, cargentos, nargol, electargol, xeroform, colloidal silver iodide, hydrosol, umbrenol, skiar-gen, dispargen and iron pyrophosphate have all been tried and long ago discarded because of some of the following faults. They are toxic, infiltrate the kidney, spread infection, lack contrast, cause necrosis of the kidney and form obnoxious precipitates when they come in contact with the urine or anesthetic, and are not stable. Kidneys removed showed infarcts

in the parenchyma stained with silver, gangrene and suppurating foci surrounded by black silver. They go through the interstitial tissues between the tubules and in hydronephrosis through the dilated tubules.

Oxygen and other gases have been used as a contrast media in the bladder and the kidney but were discarded because of deaths from air embolus, spreading of infection and one case of a ruptured bladder has been reported.

The contrast solution should be at body temperature when injected for beginners, at least, it is better to use the gravity method to properly control the pressure and at any time to be very gentle, stopping at the first indication of pain in the loin and morphine should not be given beforehand as this would prevent using the pain as a control. A small catheter should be used so that the solution can readily escape when the pelvis is full. Goldstein has demonstrated by extensive research that the human ureter is from two and two-thirds to three and two-thirds m.m. in diameter, that the ureter possesses certain normal powers of distention and it required from three to seven minutes to expel its contents and that the ureter is best studied with the catheter low in the ureter when injected. Braasch claims the ureter often is distended to two or three c.m. in diameter. Passing the catheter too high so that it bruises the kidney and using too much pressure when injecting the opaque solution, are causes of unnecessary pain to the patient. Lim found that at the two extremes of age the calyces are easily ruptured. The pelvis is an irregular cone-shaped cavity holding normally five to ten c.c. It is divided usually into two or three major calyces but there may be just one, or as many as four and one major calyx may be sub-divided into two or more calyces, each major calyx in turn divides again into from one to as many as eight minor calyces.

Braasch divides the major calyces into a base, isthmus and apex, calling attention to the fact that the isthmus is often very much elongated.

HYDRONEPHROSIS

The first evidence of a hydronephrosis is a broadening of the minor calyces as the urine is backed up under increased pressure. The kidney structures in between are destroyed by the increased pressure and the resulting interference with the circulation as the pathology increases the

major calyces broaden and the minor calyces are completely obliterated and as the process continues the tissues in between the major calyces are nearly completely destroyed leaving only abbreviated suggestion of divisions and in the worst cases the pressure is exerted on the kidney structure and pelvis until all the kidney structure is destroyed, leaving a fibrous shell forming a big sack with the pelvis, which being more resistant to the pressure than the kidney substance will be slower to dilate and stretch. The kidney may be dilated to hold 200 c.c. or more, which will cause the pyelogram to be faint, because the opaque solution will be diluted by such a large quantity of urine. The enlargement is uniform and regular in hydronephrosis and the accumulated urine is apt to become infected.

PYELONEPHRITIS

Infection of the ureter, pelvis and kidney parenchyma shows on the roentgen picture as a combination of the infection, the increased pressure and the efforts of nature to repair the pathology and you have as a result irregularities that may range all the way from dilation of the ureter and pelvis to multiple abscesses of the parenchyma and where it is secondary to hydronephrosis you may have a destruction of the kidney parenchyma, all the way from a slight irregular dilation of the calyces to a complete destruction of the kidney by pressure alone or as a combination of the increased pressure and infection. The pathology may extend into the perirenal tissue. You may have an atrophy of the parenchyma and in turn a contraction of the pelvis and ureter, or you may have a stricture or contraction at one point with dilation at others, for example, a stricture of the ureter causing an increase backpressure with dilation of the kidney.

RENAL TUBERCULOSIS

In the beginning tuberculous pyelitis will give the same pyelogram as an acute purulent pyelitis; but as soon as it extends and you have a tuberculous pyelonephritis so extensive that the kidney structure undergoes caseation breaking down and emptying into the calyces leaving intercommunicating cavities lined by soft irregular caseated kidney structure that will be filled by the opaque solution. When a pyelogram is made you will have a picture showing all the way from a slight increase in size of the calyces where the irregular cavities have been infiltrated with the

opaque solution in the beginning, to where you have the entire kidney filled by the opaque solution except where the ragged, jagged, caseated kidney structure remains, giving an irregular mottled area of increased density over most of the kidney area that will vary according to the amount of kidney destruction.

A caseous mass may calcify and true stones may form in an abscess cavity or the pathological process may extend into the perirenal tissues, or the debris may block the ureter and cause hydronephrosis. Where you have a tuberculous pyelonephritis that does not reach the stage of caseation but heals leaving a slight increase in density because thousands of small tubercles which have been healed leaving scar tissue that causes a smudgy or uniform and slight increase in density due to a calcification of the thickened pelvis and ureter and even the entire kidney may be a calcified mass.

Where you have a miliary T.B. of the kidney that has healed enough to cause all the way from a slight increase in density from normal to calcification of the tubercles, you will have a mottled increase in density that could be likened to a kidney-shaped mass of transparent jello that was filled with translucent grapes in just the size, shape and position to represent the tubercles and, of course, as the calcification increases, you would have to get grapes that were more translucent.

If the jello and grapes were viewed from a distance you would, if there were many tubercles, have them superimposed and mottled and the more the tubercles, the nearer the entire mass would be translucent. If you had a close view of the mass you would see the grapes stand out in space as if you had a stereoscopic view of a tuberculous kidney, for the normal kidney structure would be transparent to the roentgen rays as the jello to the eyes and the tubercles would stop some of the rays making it look translucent on the picture like grapes in jello.

RENAL STONES

A renal stone may block a ureter and cause a hydronephrosis and probably a secondary infection of the ureter, pelvis and entire kidney or it may just block a single calyx and cause an enlargement of a part of the kidney.

Where you have a stone in the pelvis its location can be better determined by using a weak opaque solution so that the stone

can be visualized through the filled pelvis or it may be proved to be outside the kidney limit because it is so far from the pelvis. The shape of stone may show its location as it may entirely fill the pelvis and calyces and appear just like it had been injected with opaque solution.

You are to remember that fruit pits, enteroliths, opaque salts, salol capsules, pills containing opaque drugs, foreign bodies in the intestinal tract, gall stones, calcified glands, calcified renal tubercle, two calyces superimposed, dense extremity of a transverse process, little patches of increased density in the spleen, dressings applied to the back fibromas, thick scars, moulds, cavities filled with caseous material, phleboliths, scybalum, athteromatous, plaques in the blood vessels, bilharziasis, hardened renal vessels or calcified blood clots may all produce shadows resembling renal, ureteral or bladder stones so it is necessary to use all the caution possible in making a diagnosis by taking stereoscopic pictures, lateral pictures, oblique pictures, pyelograms and by using wax tipped catheters.

To examine a ureter it is best to inject it by having wax-tipped catheters to help fill the ureter so that the solution will not flow back so readily, but you may use just a plain catheter and inject the ureter and kidney pelvis. This will demonstrate the position of suspected stones in the ureter, of any dilatation or diverticula at that point, it will show any strictures, kinks, curves, elongation, or increased capacity. While a catheter may pass a stricture, straighten out an angulation or curve and pass several m.m. from a stone in a dilatation or diverticula.

FLOATING KIDNEY

Floating or movable kidney can be studied during pyelography or with just the opaque catheter. In the ureters, it is hard to say just how low a kidney can be and yet be normal. The kidney may move laterally, in the median direction, to the other side of the spine or sink low enough to be in the true pelvis and appear to hang on the ureter and by studying the direction which the calyces extend from the pelvis may demonstrate that the kidney is rotated on the long axis of the kidney. Braasch states a kidney below the third lumbar vertebrae, median to the spine, caudal or median projection of the calyces are abnormal. The kidney may rotate so that the calyces extend in the spinal direction, there may be rotation with very little downward displacement.

The change in position of the kidney will cause the ureter to extend from the kidney at nearer a right angle and usually back farther than normal. The ureter may extend in cephalic direction a few inches and then change at an acute angle and extend in a normal position the remainder of its extent. This would make it appear that the kidney had slipped down and that adhesions are holding the ureter at the angulation. A slipping kidney may cause a kinking of the ureter, a tortuous ureter, may form spirals or complete circles.

TUMORS AND CYSTS

Tumors or cysts are demonstrated on the roentgen picture by an irregular nodular enlargement of the kidney outline. Elongation and narrowing of a calyx with the minor calyces obliterated, a filling defect caused by the encroachment or invasion into the pelvis and calyces by the tumor mass or the mass may cause a pressure filling defect into the stomach or push the stomach or intestines out of their normal position. The ureter and pelvis may be involved in the tumor mass pushing them in an abnormal position and it may even invade the ureter or pelvis causing obstruction enough to cause hydronephrosis which may become infected. The pelvis may be irregularly dilated by an ulcerating malignant tumor that destroys rather than increases the amount of tissue. In case of malignant tumors it may be that you can find secondary metastasis in the lungs by making a roentgenogram of them. A pyelogram may show the pelvis so far away from the tumor mass that the extra renal nature of the tumor may be established.

PERINEPHRITIC ABSCESS

Perinephritic abscess may be demonstrated by an abnormally high diaphragm, curving of the psoas outline and if it is possible to get a picture or see with a fluoroscope the opaque solution as it is injected and runs into the perirenal tissues.

CYSTOGRAMS

It is well to take pictures of the bladder to see if there is a stone or opaque foreign body in it, then fill it partially and ray from several angles and fill it and ray it again from several angles using the same opaque solution used for the kidney pelvis; some have used air to inject the pelvis and bladder, but discarded it because of embolism. Vesical malformation, vesical ulcers, intravesical enlargement of the prostate, diverticula, and in-

travesical tumors no larger than a thimble can be demonstrated by careful examination.

Some have curled up an opaque catheter in a diverticula to demonstrate it. Pacini calls attention to little sesamoid bones on either side of the pubis, that must not be mistaken for stones in the bladder or prostate.

URETHRAGRAMS

Where it is impossible to pass a diagnostic instrument into the urethra it may be of value to inject an opaque solution into the urethra to demonstrate the number and size of strictures, tumors, diverticula or fistulae.

The roentgen ray is sometimes useful in demonstrating opaque foreign bodies in the urethra. It can be rayed from a lateral, oblique and anterior posterior view.

CONGENITAL ANOMALIES

Under congenital anomalies may be mentioned duplication or double pelvis and ureters, horseshoe and fused kidney, congenital lobulation, congenital cystic kidney, congenital movable kidney, congenital stenosis, and the congenitally large pelvis.

FLUOROSCOPIC EXAMINATION OF THE URINARY TRACT

When careful attention is given to every detail of the technique as having an absolutely dark room, Bucky fluoroscopic grid and where the roentgenologist stays in the dark room long enough for the eyes to completely relax it is possible to even see gall stones and some very good men claim to be able to outline the kidneys as well as with pictures. There is no doubt but that by filling the pelvis under fluoroscopic control you can see when the pelvis is full, see any return flow or when the pelvis needs refilling, eliminating pictures with the pelvis incompletely filled and by viewing the pelvis at all angles and by having the patient breathe deep to observe the motility and see whether any abnormality moves with the kidney, palpating for tenderness and points of increased resistance. It is possible to get a better idea of the pelvis than it would be from pictures unless many were taken at different angles if at all. Stones no larger than a pea have been reported visible. Hagner reports seeing the opaque fluid running out into the perirenal tissue and his findings were verified at operation. Valuable information can be obtained about the ureters, urethra and bladder by using the proper tech-

nique and viewing from all angles before and during injection and after. You have an added consumption of time and saving of expense.

I think in the majority of cases the roentgenologist will not adhere to the rigid technique necessary and that the method will not become popular but it is fair to at least admit that it is indicated in certain conditions and will give information impossible with pictures alone.

RETROPERITONEAL ROENTGENOGRAPHY

Injection of oxygen or carbon dioxide gas into the perirenal tissue makes the most beautiful kidney pictures I know of. A needle used for spinal puncture is passed into the perirenal tissue in the region at the end of the transverse processes of the first to third lumbar vertebrae with probably the place of choice at the second. After the needle has been passed into the tissues and neither blood, pus, nor urine issues from the needle and the manometer registers the respiration, 300 to, in some cases, 700 c.c., can be injected using an ordinary pneumothorax outfit. The only discomfort is a sense of fullness which will go away and another 100 c.c. can be injected again before the discomfort is felt. The pictures are immediately made and as you know CO₂ is absorbed quicker and you have to work faster than when oxygen is used. After the pictures are made the patient may go home in comfort, however, it is well to have the patient remain reasonably quiet for the next 24 hours.

Some complain of fulness in the tonsil and posterior pharynx due to small bubbles of gas accumulating in that region but to my mind, there is not the unpleasant results that follow pyelography and this method can be combined with pyelography.

The kidney and adrenalin capsule can be plainly made out and of course a stone or any enlargement can be made out because the gas makes an area of decreased density around the kidney. This method is not applicable to cases with high fever, acute infection, large floating kidneys or neuropathic patients.

PNEUMOPERITONEUM

Pneumoperitoneum is used by many, which consists of injecting a liter or two of oxygen or gas into the peritoneal cavity, the needle being inserted just below the umbilicus, the patient turned on either side and the kidney is visible to show any change in size, shape and position.

Some roentgenologists have tried injection of air into the colon and think that aids in visualizing the kidneys.

Contraindications for pneumoperitoneum is peritonitis and acute appendicitis.

TECHNIQUE OF EXAMINATION

The first essential is to thoroughly clean out the bowels by giving a large dose of castor oil or some vegetable cathartic. Saline cathartic should be avoided as they produce too much gas and the patient should have an empty stomach at the time of the examination. A fine focus tube using a low voltage should be used to bring out the details of the soft tissues.

The patient should be placed on a Bucky diaphragm and a 14 by 17 film placed to include the two lower ribs and abdomen, then a stereoscopic view made.

Compression on a rubber bladder, well inflated, should be used to press the other viscera away from the kidneys and to keep the pulsating aorta and other viscera from moving the kidneys.

It is extremely essential for the patient to hold the breath, for a very slight movement of the kidney will destroy the outline of the kidney or cause small stones to be overlooked.

REPORTS

Mrs. R.: The physician ordered an examination of the gastro-intestinal tract. A barium meal was given and a filling defect on the greater curvature of the stomach about the size of a base ball was present while the patient was in the horizontal position but the defect had the appearance of pressure from the outside and when the patient was raised to the vertical, under fluoroscopic observation the stomach apparently moved anterior to the obstruction and the stomach filled without a filling defect. A pyelogram was made and there was a marked deformity of the calyces which proved to be a kidney tumor at operation.

Mrs. J. was sent in for an X-ray examination of the gall bladder. A tumor mass that had the appearance of being a kidney was irregular in shape, about ten inches long and six inches wide with a stone that had a position and a shape suggesting a stone in the pelvis. A barium meal was given and the stomach was entirely on the left side. Cystoscopic examination failed because of the pathology in the bladder. Patient refused to submit to further examination.

A boy that was emaciated and had the appearance of a long, severe illness, came in with orders for an X-ray of the spine. The spine was negative except a lateral curvature. There was quite a marked curvature of the outline of the psoas muscle that was convincing enough with the history and other evidence in the examination to justify the surgeon to operate expecting to find pus and it proved to be an enormous long standing perinephritic abscess.

A strong, healthy looking man was sent to me for an examination of the chest with a history of pain in the lower right side. I called the doctor and reported that the chest was negative but the doctor insisted that he thought it was a lung condition. I made another picture and called him again and told him I was sure there was no pathology in the lungs and told him one diaphragm was slightly higher than normal but not enough of itself to make a diagnosis and asked that he consider a perinephritic abscess.

A few hours later I was at the hospital and was surprised to find out they had already removed a quart of pus from the perirenal tissues.

PYELOGRAPHY

S. D. NEELY, B.S., M.D.
MUSKOGEE

In this paper, I will only attempt to discuss the indications, contraindications, dangers and diagnostic advantages of pyelography. Naturally to do pyelography, cystoscopy must be done. In no branch of medicine is there more information to be gained, nor more different procedures to be followed for this information than in Urology. Authorities differ only in the minor technic to be followed.

Preparation of the patient—This is done as for ordinary cystoscopy. Copious water is insisted upon, the patient drinking at least four glasses of warm water one hour before cystoscopy. He should be given some laxative which will eliminate as much gas from the colon as is possible. We routinely give four drachms of compound licorice powder. The patient receives one-eighth grain of morphine sulphate hypodermically immediately before being sent to the cystoscopic room, providing there is no idiosyncrasy to this drug.

Indications—Pyelography is indicated in any genito-urinary condition where the symptoms or findings point to ureteral or kidney involvement. Urinalysis should be run on every patient complaining of abdominal pain. This is much better if a 24-hour specimen is secured. Urinalysis should include chemical and microscopical, both being done by a competent technician. If there is found pus, blood, albumen or numerous organisms, a cystoscopic examination is indicated. At each cystoscopic examination both ureters should be catheterized, unless there is a definite contra-indication as a severe cystitis. After a careful urinalysis on the catheterized specimen, which should also include culture and animal inoculation there is found pus, blood, albumen or numerous organisms, this patient should have a pyelogram of the affected side or sides. Pyelography is often done to ascertain the exact position of the kidney, and to rule out malformations of the upper urinary tract. It is nothing uncommon to see a patient with operative scar over McBurney's point, who has had appendectomy done, with no relief of symptoms, when after a careful examination it is found that his true pathology is in the genito-urinary tract, lithiasis and pyelitis being the most common. Scientific medicine should and does isolate the man who opens an abdomen for appendectomy, which is not acutely surgical, until all clues have been followed towards a diagnosis. I do not mean to say that pyelography should be done routinely. Braasch states that urography is frequently being employed unnecessarily. Its limitations and indications should be kept in mind if the procedure is best to serve the patient..

Contra-indications—Pyelography is not contra-indicated where cystoscopy can be done, and cystoscopy can be done on any patient who is not too seriously ill. Some men believe that extremely high diastolic blood pressure (above 100), advanced pulmonary tuberculosis, advanced carcinomatosis, advanced and bilateral renal diseases are contra-indications.

Dangers—It must be remembered that pyelography is accompanied by a certain amount of danger to the patient. There are some men who believe that when a media is injected into the kidney pelvis there is an infiltration of this media into the kidney parenchyma which may produce a suppression of urine. This might happen with long continued retention

within the pelvis, but it is always accompanied by infection. When only moderate pressure is exerted, either by the gravity or syringe method, I do not believe that there is any danger of injuring the kidney parenchyma, providing precautions are taken not to over-distend the pelvis and to assure adequate drainage. The patient's complaints should be taken as a guide. He will experience some discomfort when sufficient pressure has been given to fill the pelvis. This pain may be anywhere from the loin, following the normal urinary flow. Suggestion may result in this pain, so it is thought best to gradually inject five c.c. before suggesting this to the patient. The normal pelvis will hold from five to ten c.c., and as much as 18 c.c. has been injected into an apparently normal pelvis without pain. Braasch states that any pelvis holding beyond 30 c.c. should be considered abnormal. It must be remembered that in hydronephrosis, pyonephrosis and lesions affecting the efferent nerves to the urinary tract there may be no pain. Sodium bromide, 15 per cent, is routinely used, autoclaved immediately before use. This solution is irritating, and from this irritation another danger is added. We routinely drain all pelvis immediately after pyelography for five minutes. Instrumentation within the ureter by catheter necessarily, is accompanied by trauma, and often blood is secured in this way in the catheterized specimen, despite precautions taken. This trauma, I believe, is one of the greatest potential dangers of pyelography. The ureter, composed of muscle tissue, naturally is subjected to spasm as the result of trauma. This spasm may form a temporary blockage with consequent back pressure and pain. This is not an anuria from suppression of urine, and is always accompanied with pain. Another danger in pyelography is in trespassing through an infected bladder, and introducing an infection into the kidney pelvis or ureter. Double pyelography is thought to be dangerous by some urologists. I do not believe that double pyelography should be done routinely, and only when there is direct evidence of double kidney involvement. It may be done for comparison, and occasionally may be done to save time, or avoid subjecting a hypersensitive patient to the inconveniences of multiple cystoscopic examinations.

Technique of Pyelography—A radiogram should be taken of the patient's abdomen. This film should show the ilio-

psoas muscles, the lower poles of both kidneys, the transverse processes of the lumbar spine, the sacrum, coccyx, and the lower two dorsal vertebrae. From this film, size, shape, position and contour of kidney can be ascertained. The ureters are then catheterized, another film taken, which shows the catheters in place. Care must be taken to remember that a catheter may straighten out a curved or kinked ureter. The media is then injected into the kidney pelvis, and another film taken. This will give a definite urinary tract with the pelvis filled. If a ureterogram is indicated, the catheter is withdrawn some ten inches and reinjected. This work is all done with Bucky diaphragm technic. The vertical, horizontal and lateral views may be taken.

Interpretation of the film—Pyelitis: One of the most common pathological conditions met with is pyelitis. This is evidenced by signs on the film first in the minor calyces. There is a blunting, roughness, and at times, a blurring of the calyces. The entire film must be considered, detail if found good in the bony tissue, and blurring in the calyces is indicative of infection with beginning destruction in this part. There is some dilatation of the calyces which is indicative of destruction. Later this will be found to involve the pelvis with roughness and dilatation. To be absolutely sure of the infecting organism in the interpretation, I believe courts disaster. The roentgenologist cannot stand alone and call a pyelitis tuberculous. He must act in conjunction with the urologist, and many times the history, findings, etc. will not clear up a definite diagnosis. Lithiasis: Here, pyelography certainly aids in diagnosis, but should be thoroughly done, which includes every position, and technique mentioned above. The stone in one film will be seen to overlay the exact position of the injected pelvis in another. Many times in interpreting lithiasis from a straight G. U. film, the roentgenologist will be wrong, and this should not be done until backed up by different pyelographic studies, and perhaps gall bladder visualization. Some stones will give only a filling defect in the pyelogram, here the roentgenologist should be sure that the pelvis is sufficiently injected, for the same filling defect can be the result of insufficient filling. Tumor: This is the most deceiving of all, it is evidenced most often by a filling defect in the injected kidney, distortion of the pelvis, and is simulated by soft stone, inadequate filling of the extra-renal pressure. The diagnosis of renal tumor calls

for a most careful resume of all the findings, symptoms, and history of both the urologist and roentgenologist. Position: The right kidney is subject to many normal variations in position. It is routinely called ptotic when the lower pole lies below the iliac crest. An enlarged liver, deformity of the spine, and actual decreased abdominal measurements from ziphoid to pubes may result in an apparent ptosis. A pyelogram will aid in determining the normal mechanics of the kidney, if the pelvis is so situated that it will drain with the patient in the erect position, and the lower pole lies above the iliac crest, this kidney may safely be called normal in position. There are many types of rotation of the kidney which will produce symptoms, which a pyelogram will aid materially in determining. Malformations: Malformations are occasionally met with in the upper genito-urinary tract in pyelographic study. Chief among these is an asymetry of the pelvis which may resemble a bifurcation on one side, or tumor.

Resume—In the interpretation of the pyelographic films, the roentgenologist must guard against undue optimism in definitely stating the pathological conditions existing. He should act in conjunction with the urologist and attempt only to interpret the shadows on the film, naming the definite pathology only when he is sure it exists and can be proven at operation if necessary. Roentgenology is an exact science, and should be dealt with only as such and not guessed at.

THE ANTITOXIN IN THE SERUM

We speak of antitoxic serums, or antiserums, as the equivalent of antitoxin; but the serum simply contains the antitoxin, and along with it certain other ingredients that it has been the object of biologic research for the past thirty years to get rid of. These are, so far as known, albumens and euglobulins. The former have been separated, to a large extent, from the antiserums, but the antitoxic principle is very closely linked with a globulin or a pseudoglobulin so that separation of these has been found extremely difficult.

The albumins and euglobulins are believed to be responsible for the serum sickness and serum sensitiveness that sometimes follow the use of antiserums.

An absolutely pure antitoxin has yet to be developed, but the analytic work of the pioneers in biologic therapy has at last succeeded in simplifying the problem to a certain extent. The Diphtheria Antitoxin now being offered by Parke, Davis and Company, is the most concentrated and the freest from all objectionable features of any heretofore supplied by this house. It is almost water-white in its purity, and contains a minimum, perhaps the irreducible minimum, of albumins and euglobulins.

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DR. CLAUDE A. THOMPSON..... Editor-in-Chief
Barnes Building, Muskogee, Okla.

DR. P. P. NESBITT..... Associate Editor
Palace Building, Tulsa, Okla.

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EDITORIAL

GASTRODUODENAL ULCER

There are few conditions more baffling and difficult of successful treatment than the above condition. Lately there has been more accord between the internist and surgeon than heretofore, in that the internist readily admits the necessity for surgical intervention after certain stages have been passed and certain conditions exist, in spite of careful medical treatment, while the surgeon readily admits that med-

ical or conservative treatment should be first instituted and given a fair trial, and then, in the event of failure or unrelief of symptoms, surgery should be considered.

As to medical treatment, for that matter either medical or surgical, several factors enter. In deciding the course to follow, the physician probably follows the best course who takes into consideration the fact that the treatment, at first, is essentially medical, provided, the case is an early one, that is early diagnosed, that the patient is young—those 40 years or older do not show as satisfactory results as the young— and that general nutrition and health, otherwise, is in fair or good condition. The internists admit that the complicated cases, those with repeated hemorrhage, and of course, perforation, mechanical deformity of the stomach or suspicion of malignancy, are essentially surgical cases.

Berg¹ in summarizing indications for operative treatment is guided by the following and advises surgical treatment when:

The patient has had at least one adequate "cure", whose symptoms have remained unrelieved or have relapsed.

Patients with sustained, active hemorrhage, perforation of ulcer, anatomic deformities of stomach or duodenum and pyloric stenosis.

Those whose symptoms have lasted more than four months despite medical treatment.

Those with ulcerations of the lesser curvature, in whom X-ray examination shows a niche of 2.5 cm. or more.

It is his opinion that the only operation that has brought about a permanent and lasting cure of ulcer is subtotal gastrectomy, consisting of removal of almost two-thirds of the stomach, the pylorus and first portion of the duodenum.

As in all chronic conditions, the economic factor enters to complicate matters. It is, indeed, difficult to have the breadwinner of the family undergo the long, exacting rest, dietary and medication necessary to give medical treatment the best results, but in every case, where such course is indicated, an attempt should be made to carry it out. While the question of an old ulcer ushering in malignancy is debatable, nevertheless, to many the danger is real, and many believe that the menace of cancer in such cases is always present.

(1) Crohn "Affections of the Stomach."

PROPOSED FEDERAL LEGISLATION

The Bureau of Legal Medicine and Legislation of the American Medical Association announces that the November Bulletin of the Association will contain certain matters of pressing interest to the profession generally. In view of the fact that Congress will convene December 5th, the Bureau suggests that it is desirable that senators and representatives be informed as to this prospective legislation, that it is hoped we may have their concurrence, but the Association asks no pledge of any such concurrence. It asks only that if the policy of the Association seems of doubtful wisdom, judgment be suspended with respect to it until the Association has opportunity of submitting the reasons for that policy. The salient points under consideration are:

The National Prohibition Act and Harrison Narcotic Act: Legislation will be proposed requiring notice to all interested parties of every regulation proposed by the Commissioner of Prohibition as to the National Act and the Harrison Narcotic Act, to give opportunity for the medical profession to be heard before the promulgation of any regulation, for notice of promulgation and reasonable time for adjustment of affairs so as to comply with any such new requirements. As the law now stands the Commissioner can lawfully promulgate a regulation without notice to anyone to do so, and it may take effect the moment it is approved by the Secretary of the Treasury. The law does not now require that it be published at all. The proposed legislation has the approval of the House of Delegates and various state medical associations.

Sale of Dangerous Cosmetics: It will be proposed to safeguard the people against the manufacture and distribution of dangerous cosmetics, control to be under supervision of the Federal Government.

Income Tax and Physicians' Traveling Expenses: It will be asked that physicians be given the right to deduct from taxation expenses incurred in attending meetings. Chemists, ministers, corporations, and, it is believed, business men, generally, now have such right.

The Prohibition Act: It will be proposed that physicians be permitted to prescribe for patients in need, such amounts of alcoholics as the attending physician believes necessary. This has the endorsement of the House of Delegates.

Retirement Privileges for Disabled Medical Officers of the Army and Navy: It will be proposed that medical officers who served in temporary forces of the Army and Navy during the World War, and who were disabled by injury or disease acquired in line of duty, be granted the same retirement privileges accorded to medical officers in the regular Army and Navy under similar conditions. This is approved by the House of Delegates, also.

The Veteran's Bureau: Referring to medical, surgical and hospital services for veterans suffering from diseases and injuries not of service origin, the Bureau of Legislation states that legislation may be proposed to perpetuate and enlarge free services, now given to veterans, rich and poor, for disabilities not incurred in line of duty. That the Act of 1924 authorized the Director to admit for treatment, veterans of all wars, occupations and expeditions subsequent to 1897, without regard to origin of disabilities, and, that as a result, admissions increased 20 per cent in 1925, that for every two admissions for service connected disabilities, one admission was for non-service connected disabilities. It is stated that the American Medical Association does not desire the diminution of a single bed for the care of veterans suffering from service connected matters, but legislation providing for admission of patients, rich and poor, suffering from disabilities in no way whatsoever connected with the service, has been condemned by the Board of Trustees of the Association.

The Sheppard-Towner Act: Proponents of such legislation, it is understood, agreed that extension of this legislation would not be asked for beyond the time provided for by the Sixty-ninth Congress, it is now rumored that extension or new life may be asked for. As it stands the law will automatically expire for lack of appropriations unless renewed. The House of Delegates has gone on record as opposed to this Act.

Oklahoma physicians are not much interested, except as spectators, in the effect of regulations limiting physicians activities as to prescribing alcoholics. We have never had any sort of permission in that regard, and, as we now recall, when the Enabling Act was before the Public no one came forward protesting deprivation or limitation of our rights in that respect. As a matter of common sense, no legislative body should arrogate to itself the

right to tamper with the scientific acts of physicians, nor are we in favor of a law penalizing a respectable profession merely because a small minority of that profession fails to act in good faith. It would be dangerous, for instance, to apply such rule to other professions, such as the law, ministry, etc. The Harrison Narcotic Act is identical, in that it, too, works a hardship upon legitimate practitioners, merely because a small minority, rapidly being weeded out, fail to comply with the law. The rapid, unpublished alterations of regulations under this law have made it especially obnoxious and irksome to physicians. Some good ones never know when they are violating its multifarious regulations. Regardless of individual opinion on any or all of these matters, the interests of the profession are pretty generally synonymous, therefore, every attention should be given the proposals and our representatives asked to give them fair consideration before action is taken.

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Editorial Notes—Personal and General

DR. E. P. CLAPPER, Waynoka, has been appointed city physician.

DR. J. F. MARTIN, for many years located at Deer Creek, has moved to Guthrie.

DR. J. L. PATTERSON, Duncan, visited Mayo Clinic at Rochester, Minn., in October.

DR. A. M. CHAMBERS, Weleetka, has returned from a two months trip to California, Texas and old Mexico.

DR. and MRS. J. HUTCHINGS WHITE, Muskogee, have returned from an extensive visit to Yellowstone and Canadian points.

DRS. S. R. BATES, J. H. PLUNKETT, Wagoner, have purchased the Hayward building which they will utilize for hospital purposes.

DRS. O. C. and J. E. STANDIFER, Elk City, announce the near completion of the Musick hospital. It is reported that the hospital is modern in every respect.

DR. M. S. GREGORY, Oklahoma City, addressed the Panhandle Medical Association of Texas, Plainview, October 11th, on "The Character Traits and Insanity."

DR. FRED S. CLINTON, Tulsa, on November 7, was elected Honorary Life President of the Oklahoma State Hospital Association, meeting at Miami. On November 3, Dr. Clinton was elected President of the American Association of Railway Surgeons, meeting in Chicago.

DR. FRANK HOWELL, Okmulgee, has located in Wewoka.

STEPHENS COUNTY Medical Society meeting at Duncan, November 3, heard Honorable Cham Jones deliver an address on "Malpractice Suits".

DR. M. S. GREGORY, Oklahoma City, read a paper before Okmulgee County Medical Society, November 14, upon "Functional Neuroses."

DR. FRED WATSON, Okmulgee, is in Philadelphia where he will remain in the University of Pennsylvania for an eight months' course in Surgery.

DR. and MRS. C. H. MCBURNEY, Clinton, after attending the American Legion Convention in Paris, are making an extensive tour of European points.

DR. FRED S. CLINTON, Tulsa, attended the hospital conference of the American College of Surgeons at Detroit and the American Hospital Association meeting at Minneapolis.

LINCOLN COUNTY held their regular meeting October 5th at Chandler. Clinics were held in the afternoon. Dr. W. E. Dixon, Oklahoma City, read a paper on sinus infection.

DR. IRA CUMMINGS, Ponca City, has resigned his position as city physician and has entered Washington University, St. Louis, where he will remain for seven months.

THE STATE BOARD OF AFFAIRS has directed the Superintendents of State Hospitals, Vinita, Norman and Supply to refuse admission of patients under 16 years, or more than 60 years, without good and sufficient reasons. The order is made necessary by reasons of overcrowded conditions of these institutions

DR. JAMES L. AUSTIN

Dr. James L. Austin, for many years a practitioner of Durant, and a councillor for the State Medical Association, died suddenly in his office, Wednesday, October 26th. Death is believed to have been due to heart disease. While he was apparently well, he had been complaining of feeling badly.

Dr. Austin was born in Grapevine, Texas, March 31, 1878. He received his medical degree from Baylor Medical College in 1903. He was licensed to practice medicine in Indian Territory in July 1906. He practiced for a time at Blue, later moving to Durant, where he was associated for a long time with Dr. J. L. Shuler. Dr. Austin was a steady, industrious and efficient member of the Council and during his many years of membership never missed a meeting, rendering good service to the profession.

He was a member of the Masonic fraternity and the Methodist Church. He is survived by his widow and one son, Walter L. Austin.

DR. L. B. TORRENCE has been appointed city physician of Okmulgee.

DR. W. A. DEAN, Tulsa, is in New Orleans doing special work in obstetrics.

DR. PAUL SANGER, Drumright, attended Clinics in Chicago in October.

DR. and MRS. DAVID M. COWGILL, Ponca City, announce the birth of a daughter.

DR. FORREST ETTER, Bartlesville, spent October doing pediatrics at Washington University, St. Louis.

DR. JOHN R. CALLOWAY, Pauls Valley, has returned from an extended visit in states on the Pacific Coast.

DR. E. E. GOODRICH, Crescent, and Miss Thelma Cahill, were married October 2nd. They will make their home in Crescent.

MALARIA, according to the State Department of Health, led all other diseases for the week of October 15th, nearly 400 cases being reported.

OTTAWA COUNTY MEDICAL SOCIETY invited many physicians to attend a picnic on the classic banks of the Neosho River, October 26. Shop was not talked but plans were made for the future. The rest of the time was devoted to eating.

MEDICAL ATTENTION for the poor may be paid for by County Commissioners according to opinion held by Attorney General Dabney recently. This has been universally understood prior to this time. The great trouble has been and

WILLIAM PORTER MILLS, M.D.

Died at his home, Claremore, October 3, 1927, after an illness of several months of cancer of the stomach.

Born in Salisbury, Md., March 13, 1873, obtained his A.B. and A.M. at Western Maryland College, Westminster, Md. Graduated in medicine at George Washington University, Washington, D. C., 1898—he engaged in the practice for a time in Washington, D. C., later removing to Las Vegas, N. M., where he practiced several years before taking charge as Medical Superintendent New Mexico Hospital for Insane. He resigned this position to enter the World War and served as a medical officer until the completion of the war.

In 1919 he located in Claremore, where he lived and practiced until his death.

He was a member of the M. E. Church and the Masonic orders. He had served as president and secretary of the Rogers County Medical Society and at the time of his death was vice president.

He is survived by his wife, Mrs. Gertrude Mills and two daughters.

Burial was at Columbia, Mo.

still exists in that there lies the greatest difficulty in getting County Commissioners to assume the obligation. Hospitals generally, throughout the state are constantly coming up loser on this score.

DR. CARL PUCKETT, Oklahoma City, director of Public Health Association, states that 200 persons died in Oklahoma last year as a result of a sociological and economic problem. Three times as many women than men died and five times as many farmers than all others died. One half of these deaths being over 40 years of age. Dr. Puckett warns against food conditions among farmers especially and advised that they produce for home consumption, milk, whole wheat, meats, eggs, fresh fruits and vegetables.

KANSAS CITY'S MEETING of the International Clinics Association was, perhaps, the most widely attended meeting so far as Oklahomans was concerned, ever held, except the American Medical Association meeting at Dallas. The Kansas City Meeting was successful from every view point. It holds the distinction, perhaps, of having transacted more business than any other medical meeting ever before held in the United States. Clinics and papers started daily, promptly at 7 a. m., 1 and 7 p. m., and the physicians who was not present at about these hours failed to get a front seat. Speakers with the aid of amplifiers were able to clearly address approximately 5000 physicians at once.

SOUTHEASTERN OKLAHOMA MEDICAL ASSOCIATION MEETING

Program of the Southeastern Oklahoma Medical Association to be held at Durant, Oklahoma, on Thursday, December 15, 1927, beginning at 10:00 A. M. Meeting at Court House in County Court room.

Invocation—Rev. W. A. Carter, pastor First Nazarene Church, Durant.

Welcome address—Hon. W. E. Utterback, Durant.

Response to Welcome Address—Dr. W. G. Ramsay, Quinton.

President's Address—Dr. C. C. Gardner, Atoka. Chronic Gonococcal Urethritis With Treatment—Dr. G. E. Johnson, Ardmore.

Infant Feeding—Dr. M. R. Woodward, Sherman, Texas.

Luncheon

Septic Meningitis (Case Reports)—Dr. C. A. Thompson, Muskogee.

The Khan Precipitation Test in Syphilis—Dr. R. L. Hickman, Durant.

Personality Traits and the Insanities—Dr. M. S. Gregory, Oklahoma City.

Subject Unannounced—Dr. J. S. Fulton, Otoka. The Human Mind, and the Effect of Mind Over Matter—Dr. Frank Bates, Coalgate.

RESOLUTIONS OF ROGERS COUNTY MEDICAL SOCIETY

WHEREAS, Death has removed from our Society its Vice-President, and one of its most distinguished members in the person of Dr. William P. Mills, of Claremore, Oklahoma, and

WHEREAS, his personal and professional life was always on a very high plane, and

WHEREAS, his high conception of his professional duty to both his patients and to his fellow practitioners was ever a source of pride to the members of this Society, and his gentlemanly conduct and devotion to duty has left us a heritage of which we may well be proud,

NOW, THEREFORE, Be it resolved that this true testimonial of love and high esteem of his Colleagues and the profession be made a record in the minutes of the Society, and that copies of this resolution be given to his family, the local press and the Journal of the Oklahoma State Medical Association.

DR. R. C. MELOY,
DR. F. A. ANDERSON
DR. W. S. MASON
Committee.

ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M. D.
717 North Robinson St., Oklahoma City

FRACTURES OF THE SHAFT OF THE FEMUR. — J. Am. M. Ass., 1927, LXXXVIII, 219.

Fractures of the shaft of the femur are generally being treated by the closed method with particular attention to union, length, alignment, apposition, and the resulting condition of the adjacent joints.

The methods employed are the use of Buck's extension, Thomas' splint, Hodgen's splint, and the plaster cast.

West advocates the combined use of the plaster spica and adhesive weight traction, especially in fractures above the lower third and in children between six and 18 years of age.

FRACTURES OF THE ANKLE JOINT AND OF THE LOWER END OF THE TIBIA AND FIBULA. — J. Am. M. Ass., 1927, LXXXVIII, 223.

The object of treatment should be to expedite complete recovery of function: (1) Proper alignment of the main fragments of the tibia so that the flat bearing surfaces of the tibia and astragalus are horizontal and parallel, and (2) the application of sufficient traction with the foot at a right angle.

Reduction should be effected immediately under general anaesthesia and the limb immobilized in plaster extending well up on the thigh. If this method proves ineffectual, an open operation should be performed early.

When the patient begins to bear weight, the fracture should be protected for a few weeks.

TREATMENT OF ACUTE COMMUNUTED FRACTURES ABOUT THE ELBOW JOINT. — Report of Sixty Cases. H. Earle Conwell. South. Med. J., XX, 579, Aug., 1927.

This deals only with the severe cases where the usual Jones acute flexion method is not practical. There were 48 simple fractures and 12 compound fractures. There were 15 positive Wassermann reactions immediately after injury, but 12 of these were negative a few days later. All were admitted to the hospital, X-rays taken and immediate manipulation and reduction under anaesthesia. Adhesive traction and suspension to forearm, and adhesive traction and lateral splints

to the upper arm. A special traction abduction frame is attached to the bed holding the arm at 90 degrees of abduction and the forearm flexed and suspended. From four to twelve pounds traction on upper arm. Just enough weight on forearm to allow elbow to rest gently on abduction board. The elbow is flexed only about ninety degrees until the swelling subsides, then gradually increased from day to day. Active motion is allowed as soon as the patient can be persuaded to carry it out. Ether and Dakin's solution are used to cleanse compound wounds. Following the removal of supports, hot baths, massage, active and passive motions and diathermy are used. Daily inspection and radiant light are used while cases are in the hospital. No forced motions are used.

TREATMENT OF ACUTE COMMUNUTED FRACTURES ABOUT THE ELBOW JOINT. CONT'D. South. Med. J., XX, 579, Aug., 1927.

Let the patient do all the work. Excellent results have been obtained. There were 45 excellent results, ten fair, and only five ankylosed. Good detailed drawings, and photographs of the method are shown.

FRACTURES OF THE UPPER THIRD OF THE ULNA. — Isidore Cohn, South. Med. J., XX, Aug. 1927.

Accurate reduction of these fractures is important on account of the carrying angle, and the function of the elbow joints. If the reduction cannot be accomplished by manipulation, an open reduction is indicated. An incision is described for approaching the upper third of the ulna and the elbow joint. This article is well illustrated and numerous radiographs shown.

BACTERIOLOGY, PATHOLOGY and PUBLIC HEALTH

Edited by Drs. L. A. Turley and Gayfree
Ellison, Norman, Oklahoma

The Treatment Of Cancer Of Paranasal Sinuses, Tonsils, and Larynx., Lewis, F. O.: Surg. Clin. N. Am., 1927, VII, 339.

In cancer of the paranasal sinuses, tonsils, and larynx, very gratifying results may often be obtained when the condition is recognized early and prompt rational treatment is given.

For antral growths the external opening advocated by Greene may be used. This remains open and has the advantage of allowing thorough inspection of the area at all times and if necessary, the repeated application of radium. One patient who had an adenocarcinoma offers the best prognosis. Of 28 cases of carcinoma of the antrum, all but three were hopeless.

Carcinoma of the tonsils should be treated by radium in preference to operation if seen early enough for curative treatment. It is more favorably affected by radiation than similar growths elsewhere in the body.

Carcinomata of the larynx have been classified as: (1) intrinsic, arising from the cords, ventricles, ventricular folds, interarytenoids, and subglottic area, and (2) extrinsic, arising from the

epiglottis, arytenoids, aryepiglottic folds, pyriform sinuses, and the pharyngeal surface of the cricoid cartilage.

The intrinsic form is the more common. The structures most often primarily involved are the vocal cords. The condition develops slowly. Metastasis is late because of the confined arrangement of the laryngeal lymphatics.

The extrinsic form metastasizes early, but the prognosis should not be as hopeless as is generally supposed. In all cases of chronic cough, laryngitis or hoarseness, and in those in which a tumor is known to be present, cancer should be excluded. Because of extensive involvement that had been allowed to occur before a correct diagnosis was made, not one of 75 cases of carcinoma of the larynx seen in five years was suitable for laryngofissure. In all cases with any suspicion of malignancy whatever, an examination should be made by a skilled laryngologist. In the last stages of the disease with dyspnoea, foul breath, gland enlargement, etc., the diagnosis is evident.

The differential diagnosis of carcinoma, tuberculosis, and syphilis is difficult. Two of these diseases may occur simultaneously. In all cases, skillful and repeated laryngoscopic examinations followed by biopsy should be made.

In 1925, about five per cent of the 78,000 deaths from cancer were due to cancer of the larynx. Operable cases should be treated surgically when possible; radiation has been disappointing. Radiation should be used in inoperable cases, in cases in which operation is refused, and for the postoperative treatment of the extrinsic form of cancer.

For the intrinsic form, the treatment should be laryngofissure for growths limited to the cords, and total laryngectomy for all others. Endolaryngeal removal and hemilaryngectomy are not recommended.

If laryngofissure is done, fulguration of the growth is preferable to excision because it prevents hemorrhage, lessens pulmonary complications, and usually obviates tracheotomy.

For cases with extension beyond the cords, total laryngectomy is the only means of possible cure. Many patients who have had this operation are alive and able to work after from two to five years and have splendid buccal voices. A one-stage operation under rectal anaesthesia is done. The head is placed lower than the body and extended to bring the neck into prominence. A T-incision is made from the hyoid down and across the hyoid. All tissues and muscles superficial to the larynx and trachea are retracted or cut, the larynx is completely freed from attachments, and all bleeding controlled.

The trachea is then opened between the cricoid and first ring, a flap of mucous membrane from the posterior surface being saved, if possible, for suturing forward to the skin. This is an effective barrier which keeps secretions from entering the trachea during convalescence. The larynx is then pulled upward and separated from the trachea, and a rubber tube is inserted into the trachea to protect respiration.

The larynx is dissected free from below upward to above the arytenoids and returned to its normal position. An opening is then made into the hypopharynx in front through the thyrohyoid membrane, the entire buccal cavity is packed with iodoform gauze, and a careful inspection of the growth is made. As much as possible of the mu-

cous membrane is saved to aid in closing the pharynx, but if the growth is extrinsic, wide excision becomes necessary.

A feeding tube is put through the nose into the stomach and the pharyngeal opening closed with two rows of No. 0 catgut.

The trachea is attached to the skin by removing all fat from the skin edge and the first ring of the trachea submucosally.

The muscles are closed in the midline. Drains are put in all four corners of the wound and brought out at the midline just above the tracheal opening. The transverse skin incision is closed. The midline incision is left open around the drains. A No. 8 tracheal tube is put in place and the wound dressed with bichloride gauze.

During the first ten days after the operation, competent nursing is essential. Drugs that inhibit the cough reflex should not be given. Suction apparatus and a bronchoscope should be on hand to keep the trachea clean. The tube should be cleaned often, and all necessary instruments should be close at hand. The patient should be propped up the day after the operation and should be out of bed on the third day. Swallowing attempts should not be allowed the first few days. The mouth must be kept clean. Liquid food of suitable calorie value should be given. The bowels and kidneys must be kept active.

Pneumonia is a very serious complication. To prevent it, the trachea must be kept free of secretions and blood clots.

Secondary hemorrhage may occur from sloughing. Mediastinitis is rare following operation by this technique.

Hiccough may be relieved by changing the position of the feeding tube.

Dyspnoea may result from the clogging of the trachea with blood or secretions.

In cases with extensive involvement, it may be necessary to remove more tissue even including the common carotid, the internal jugular, and the vagus nerve on one side. An oesophageal-neck fistula may be necessary temporarily.

For extrinsic growths high up around the epiglottis and the base of the tongue, a subhyoid pharyngotomy is done, the growth excised with the radioknife, and the wound closed without drainage.

The Principles of Syphilotherapy as Applied to the Eye., Stokes, J. H.; Arch. Ophth., 1927, LVI, 229.

Stokes, a syphilologist, warns against the treatment of syphilis except as a general disease with local manifestations. The patient rather than the organ must be treated; consequently, a general examination should always be made before the treatment is begun, to determine the stage and type of the disease, the amount and method of previous treatment, and the indications and contra-indications for any particular therapy.

In Stokes' opinion, arsphenamine is the best spirillicide, mercury is the best resistance stimulator, and the iodides are the best agents for the absorption of granulomata. Arsphenamine given in too small doses, or doses too far apart, is apt to cause sensitization of the tissues and predispose to a Herxheimer phenomenon. Mercury by inunction, by mouth, or in insoluble form in oil acts very slowly and consequently does not rapidly increase the tissue resistance. The iodides in small doses do not penetrate well into

relatively inaccessible regions such as the nervous system. Stokes suggests from six to twelve injections of 0.1 gm. of arsphenamine per 25 pounds of body-weight after an initial dose of half this amount, injections being given at least once a week and, coincident with this treatment, the administration of succinimide of mercury intramuscularly and from 15 to 50 or 100 gr. of potassium iodide three times a day.

He believes bismuth to be a spirochaetostatic rather than a spirochaetodidal drug—that it holds the infection in check instead of curing it. "Tryparsamide has no virtues in ophthalmic syphilis." "In nerve lesions of the eye, the treatment should be that of neurosyphilis and will require an intensity with which few ophthalmologists of my acquaintance would have either time, inclination, or equipment to deal."

The response is proportional to the preponderance of active inflammatory processes over scar; therefore, acute inflammatory lesions respond much better than atrophic lesions. Little is to be expected from the treatment of optic atrophy. In interstitial keratitis, intensive treatment should markedly reduce the incidence of relapse and the permanent damage.

Herpes Zoster Oticus., Sears, W. H.; *Ann. Otol., Rhinol. and Laryngol.*, 1927, XXXVI, 361.

Sears reports three cases of herpes zoster oticus. This condition is uncommon although from 8 to 15 per cent of all cases of herpes are cephalic. Attention is drawn by the author to the complex innervation of the ear.

In 1900, Head and Campbell established that the essential lesion in herpes is a hemorrhagic inflammation of the posterior root ganglia with degeneration of the peripheral and posterior nerves. The infection is usually unilateral, but bilateral involvement has been reported. The relationship between varicella, epidemic encephalitis, and herpes zoster simplex has not been definitely established. Animal inoculation is extremely difficult.

In the prodromal period the symptoms vary from a mild lassitude to severe chills and prostration. Severe lancinating pains or a burning sensation usually precede the appearance of the herpes. The area in which these sensations appear depends upon the ganglion attacked. Postherpetic pain or hypaesthesia may appear and persist. The first objective sign is a diffuse hyperaemia upon which the vesicles appear singly or in successive crops. After a few days the lesions disappear, leaving small pigmented areas or cicatrices.

Intra-oral lesions with a definite neural distribution have been observed. Complete facial paralysis and palatal or laryngeal palsies are not uncommon. These palsies are usually temporary, but may persist. Deafness of an evanescent or permanent character may be associated with the herpes. Vertigo and disturbance of equilibrium are occasional sequelae.

In a typical case the diagnosis is easy. Cases with swelling and crusting of the auricle may simulate acute otitis media or mastoiditis.

TUBERCULOSIS

Edited by L. J. Moorman, M.D.
912 Medical Arts Bldg., Oklahoma City

The Red-Cell Sedimentation Test In Children., F. M. Greisheimer, J. A. Myers, N. P. Peterson, A. D. Klein, and A. C. Collins. *The American Review of Tuberculosis*, September, 1927.

The red-cell sedimentation test was made on 152 children between the ages of 6 and 16 years attending the Lymanhurst School. It was found that there was no correlation between age, sex, weight, red-cell or leucocyte count, or percentage of hemoglobin and the red-cell sedimentation index. This seems higher in children than in adults however. The few children having a positive Larson ring showed a faster sedimentation than those not having it. The boys with positive Pirquet and Mantoux tests showed faster sedimentation rates than the ones with negative tests but this was reversed in the girls.

Ether Anesthesia in Cases of Pulmonary Tuberculosis., Charles R. Grandy. *The American Review of Tuberculosis*. September, 1927.

While physicians, especially those having much contact with pulmonary tuberculosis realize the dangers of ether anesthesia in such cases, surgeons, as a rule, do not seem to appreciate this danger and little mention is made of it in medical text books. Patients who have suffered a re-activation of their tuberculosis following ether anesthesia are constantly seen in tuberculosis clinics. Such patients who need operations which cannot be done under a local anesthetic may be given ether-oil by rectum safely. Tuberculous children needing a tonsillectomy stand the operation well with this type of anesthesia and are greatly benefitted by it. It may also be used in obstetrical work as well as for major operations. The only objection to ether-oil anesthesia is that it takes longer to give—this may be overcome by giving a small amount of chloroform by inhalation.

Observations on the Treatment of Pulmonary Tuberculosis with Sanocrysin., Gerhard Gruenfeld. *The American Review of Tuberculosis*. September, 1927.

Reports in European literature on cases of pulmonary tuberculosis treated with Moellgaard's sanocrysin are numerous and contradictory. Thirty cases of advanced tuberculosis were treated at the National Jewish Hospital in Denver with the Danish preparation. The sanocrysin was injected at weekly intervals with gradually increasing doses from 0.05 to 1.0 gm. giving 4.5 gm. in all. Of the 30 cases treated, 19 had been under observation for more than 6 months before starting treatment and had progressive lesions. The results of the treatment were on the whole unsatisfactory. Dyspeptic symptoms and loss of weight occurred in all cases and damage to the kidneys was frequent although there was apparently no lasting damage. Five cases had skin eruptions, treatment had to be discontinued in five cases; in three because of severe symptoms of gold poisoning and in two because of very poor general condition. Twelve of these patients showed some improvement in cough and sputum but none

lost their expectoration, fever, rapid pulse or became bacilli free and no conclusive change in anatomical findings was observed in any case. The red-cell sedimentation rate was consistently lowered in many cases but with no relation to decrease in cough or sputum or any improvement in physical or X-ray findings. There was some favorable influence on the subjective condition in many of these patients due to the wide newspaper publicity given to the gold treatment. Further study of the influence of sanocrysin on cough and sputum should be made with probably very small doses over a long time giving a total amount above 4.5 gm.

Heliotherapy in the Treatment of Pulmonary Tuberculosis. Frank Hammond Krusen. *The American Review of Tuberculosis.* August, 1927.

While little is definitely known about the therapeutic action of sunlight and various opinions are held as to just which rays are beneficial, the actual value of whole sunlight for extra-pulmonary forms of tuberculosis has been proven. Several investigators have been studying the effect of sunlight on pulmonary tuberculosis recently. Forty patients were studied at the Pennsylvania State Sanatorium at Cresson for six months while 20 patients were used as control cases being similarly treated except that they did not receive sun treatment. Of the 40 receiving insolation 17 were advanced, 19 moderately advanced and four incipient, while eight of the control cases were advanced, 10 moderately advanced and two incipient. The Rollier method of gradual insolation was used in all cases, the heads and necks protected by large straw hats and the intense heat of the middle day always avoided. No clothing was worn except a small breach cloth. Most of the patients liked the treatment and were much more cheerful while taking it. Cough and sputum were decreased in the majority of the treated cases but not in the control group. Hemoptysis was proved not to be a contraindication for insolation as there was only one hemorrhage among the 40 cases while 14 with a history of hemoptysis did not spit any blood during this treatment. Little effect was noticed on the appetite of the treated cases, also little difference in strength although many patients felt weaker just after treatment. Lung moisture in 31 of the 40 treated cases was decreased, in most cases markedly. This remained unchanged in most of the control group. Tubercle bacilli in the sputum were increased in 12 and decreased in 10 of these cases, of those of the control group with positive sputum the bacilli were increased in five and decreased in two. Insolation seems to have had very little effect on the weight in this group of patients. There was also little effect on the temperature although it diminished in a greater percentage of the isolated than in the control cases. Properly used, preferably by the Rollier method, sun treatment is of definite value in pulmonary tuberculosis.

BOOK REVIEWS

CLINICAL CASE-TAKING, Supplement to *Methods in Medicine*, by George R. Hermann, M.D., Ph.D., Assistant Professor of Medicine, Tulane University, New Orleans, cloth, 89 pages

with an appendix of six pages of descriptions and outlines showing positions of organs in each type. Price, \$1.50, 1927, C. V. Mosby Company, St. Louis.

INTERNATIONAL CLINICS, Volume Three; Thirty-seventh Series, 1927. Published quarterly. Edited by Henry W. Cattell, A.M., M.D., Philadelphia, illustrated, with many fine plates in color, cloth, 311 pages, J. B. Lippincott Company, Philadelphia.

The outstanding features of this issue are "Differential Diagnosis and Treatment of Gall Bladder Disease," by I. W. Held and Irving Gray, and a finely illustrated (in color) article on "The Clinical Aspects of Thrombo-Angilitis Obliterans," by William A. Steel, Professor of Principles of Surgery, Medical School of Temple University, Philadelphia, the latter stresses the use, intravenously, of sodium citrate.

UROGRAPHY. By William F. Braasch, M.D., Head of Section of Urology, Mayo Clinic; Professor of Urology, Graduate School of Medicine, University of Minnesota. Second edition, Revised and Enlarged. Octavo of 480 pages, illustrated with 759 Roentgenograms. Philadelphia and London: W. B. Saunders Company, 1927, Cloth, \$13.00 net.

A very excellent monograph, combining the various regional terms of Pyelography, Cystography, Ureterography, and Urethrography in a clear-cut manner. Illustrations are helpful in dealing with this difficult subject. The author very nicely connects Roentgenology with Urology and demonstrates that it is a valuable combination in Diagnosis. A chapter is given to technic in which he discusses the medias used, methods, dealing with Bilateral Pyelography in a conservative way. He then describes the normal kidney Pelvis and Ureter, their appearance and relations in the Roentgenogram. Next is taken up Pathological conditions and abnormalities of the kidney and ureter. He devotes a chapter each to Cystography and Urethrography. This treatise is easily understood and serves as a valuable guide to the Urologist and Roentgenologist.

—S. D. NEELEY.

GONOCOCCAL INFECTION IN THE MALE, by Abr. L. Wolbarst, Urologist and Director of Urologic Clinics, Beth Israel Hospital; Consulting Urologist, Central Islip State Hospital, Manhattan State Hospital, and Jewish Memorial Hospital, etc., with a chapter written by J. E. R. McDonagh, F.R.C.S., Surgeon, London Lock Hospital, Late Hunterian Professor, Royal College of Surgeons, London. Cloth, 89 illustrations, including seven color plates, 287 pages, price, \$5.50. 1927. C. V. Mosby Company, St. Louis.

This is one of the most sensible monographs yet written upon the control of a most troublesome condition, and touching a problem met by every practitioner, whether he specializes or not. Professor Wolbarst sets forth logically his reasons for carrying out certain procedures and especially why certain common mistakes should be avoided. McDonagh, in stating his views on gonorrhoea says: "I would start off by saying, that since the war gonorrhoea has become a more serious condition and the percentage of complications following a simple urethritis has increased. This is due to the severe local treatments to

which the patients of today are subjected." This indictment should stimulate the physician to follow a more conservative course in the conditions.

A TEXT-BOOK OF THERAPEUTICS, Including the Essentials of Pharmacology and Materia Medica. By Arthur A. Stevens, M.D., Professor of Applied Therapeutics in the University of Pennsylvania. Seventh Edition, Entirely Reset. Octavo of 758 pages. Philadelphia and London: W. B. Saunders Company, 1927. Cloth, \$6.50 net.

CLINICAL DIAGNOSIS BY LABORATORY METHODS. A Working Manual of Clinical Pathology. By James Campbell Todd, Ph.B., M.D., Professor of Clinical Pathology, University of Colorado, and Arthur H. Sanford, M.D., Professor of Clinical Pathology, University of Minnesota, (The Mayo Foundation); Head of Section on Clinical Laboratory, Mayo Clinic. Sixth Edition, Revised and Reset. Octavo of 748 pages with 346 illustrations, 29 in colors. Philadelphia and London: W. B. Saunders Company, 1927. Cloth, \$6.00 net.

A TEXT-BOOK OF PHYSIOLOGY: FOR MEDICAL STUDENTS AND PHYSICIANS. By William H. Howell, Ph.D., M.D., Professor of Physiology in the School of Hygiene and Public Health, Johns Hopkins University, Baltimore. Tenth Edition, Thoroughly revised. Octavo of 1081 pages, 308 illustrations. Philadelphia and London: W. B. Saunders Company, 1927. Cloth, \$6.50.

LECTURES ON THE BIOLOGIC ASPECTS OF COLLOID AND PHYSIOLOGIC CHEMISTRY. A series of lectures given at the Mayo Foundation and the Universities of Wisconsin, Minnesota, Iowa, Washington, (St. Louis), and the Des Moines Academy of Medicine, Iowa. 1925-26; 12 mo. of 244 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1927. Cloth, \$2.50 net.

INFECTIOUS DISEASES AND ASEPTIC NURSING TECHNIQUE. A Hand-Book for Nurses. By Dennett L. Richardson, M.D., Superintendent of the Providence City Hospital, Providence, R. I., 12 mo. of 182 pages, illustrated. Philadelphia and London: W. B. Saunders Company, 1927. Cloth, \$1.50 net.

APPLIED BIO-CHEMISTRY. By Withrow Morse, Ph.D., Professor of Physiological Chemistry and Toxicology, Jefferson Medical College, Philadelphia, Second Edition, Revised and Reset with the co-operation of Joseph M. Looney, M.D., Assistant Professor of Physiological Chemistry, Jefferson Medical College, 988 pages with 272 illustrations. Philadelphia and London: W. B. Saunders Company, 1927. Cloth, \$7.00 net.

BRONCHOSCOPY AND ESOPHAGOSCOPY, by Chevalier Jackson, M.D., Professor of Bronchoscopy and Esophagoscopy, Jefferson Medical College, Professor of Bronchoscopy and Esophagoscopy, Graduate School of Medicine, University of Pennsylvania; second edition, reset; octavo of 457 pages with 179 illustrations and 10 color plates. Philadelphia and London, W. B. Saunders Company, 1927; cloth, \$8.00 net.

Bronchoscopy and Esophagoscopy by Chevalier Jackson is a historic manual replete with graphic illustrations. His meticulous, painstaking preparation of the patient, with treatment procedure and contraindications clearly stated, merits the attention of the physician. The photo process reproduction by the author are splendid examples of the normal and abnormal and each drawing is ideally illustrated. Bronchoscopy and Esophagoscopy should occupy, in the reviewers opinion, a prominent place in the physicians library, available for ready reference.—E. Levy.

MALNOURISHED CHILD

L. W. Sauer, Evanston, Ill. (Journal A.M.A., Sept. 17, 1927), gives a brief outline of a simple, intensive, individual method of treatment for the malnourished child brought to the physician's office. It has been used successfully in several hundred instances during the last five years. The best and most permanent results have been obtained in malnourished school children with: (1) insufficient food or rest; (2) tuberculosis of the lymph glands, the pleura or the bones and joints; (3) anorexia, the result of a nervous environment; (4) goiter with or without increased metabolic rate; (5) secondary anemia. The method has not been used in underweight children with any disease of the heart, blood, urinary system or gastro-intestinal tract, including acidosis and diabetes, as such children usually require other special diets and treatments. An analysis of thirty consecutive underweight children, aged from 5 to 12 years, treated for three months by this "individual" method of intensive feeding reveals that: 1. Most of the patients fatigued easily, had poor posture and were anemic. 2. No child had been eating sufficient food; twenty-four had faulty food habits (improper food, eating between meals, especially sweets and iced foods or drinks). 3. Twenty-six had been having insufficient rest. 4. In sixteen the cutaneous tuberculin test was positive. These included eight patients with bronchial gland tuberculosis; three children with tuberculosis pleurisy with effusion; two with bone tuberculosis, and one each with cervical glands and pulmonary tuberculosis. 5. All but two were above the average height for age; twenty were of the asthenic type. 6. The thyroid gland was visibly enlarged in nine; two of these had tachycardia and increased basal metabolic rates. 7. Three had active, tardy rickets. The results were gratifying in most instances; the few who failed to cooperate gained the least. Almost without exception, coincident with the weight increase there was marked improvement in the pathologic condition. The average gains for the thirty children here reported were: 5 pounds for the first month, 3½ pounds for the second month, and 2.9 pounds for the third month, an average of more than 11 pounds for three months, or five times the average rate of gain. Coincident with the weight increase there was usually marked improvement or disappearance of the pathologic condition.

STUDIES OF STAPHYLOCOCCUS FILTRATES

Freshly isolated strains of Staphylococcus aureus were obtained by Isadore Pilot and M. L. Afremow, Chicago (Journal A.M.A., Sept. 17, 1927), from various lesions, such as furuncles, carbuncles, abscesses of the breast and kidney,

and from fatal cases of staphylococcus septic pyemia. They produced typical pigment, and on blood agar 50 per cent of the strains caused hemolysis. Both hemolytic and nonhemolytic strains produced potent toxins in the filtrates. All strains tested yielded exotoxin, which, however, varied considerably in potency. Sterile broth filtrates of *Staphylococcus aureus* produce a skin reaction when injected intradermally in the forearm of man. These reactions are neutralized by serums of the rabbit and horse immunized by injections of staphylococcus filtrates. It would appear that such filtrates contain a soluble toxin which forms antitoxin when introduced into rabbits and horses.

REDUCTION OF CERVICAL DISLOCATION

Victor F. Marshall and Clarence C. Reed, Appleton, Wis. (Journal A.M.A., July 16, 1927), recommend the method of Walton. The essentials of Walton's plan of reduction are: (1) dispensing entirely with extension, and (2) using only retrolateral flexion and rotation. The proper method is simply to raise the depressed process and rotate. This can be accomplished only by extending the head obliquely backward toward the right or left as the case may be and using the transverse process on the same side as a fulcrum. The ligaments which have held the vertebra firmly in its faulty position do not offer opposition to this movement, so that force is not required first to elevate in this way and then to rotate to the proper position. The patient should be thoroughly anesthetized (nitrous oxide), and should be in the sitting position. This gives freedom of movement and prevents confusion of the proper movements of reduction.

OCULAR FUNDUS IN ACUTE TOXEMIAS

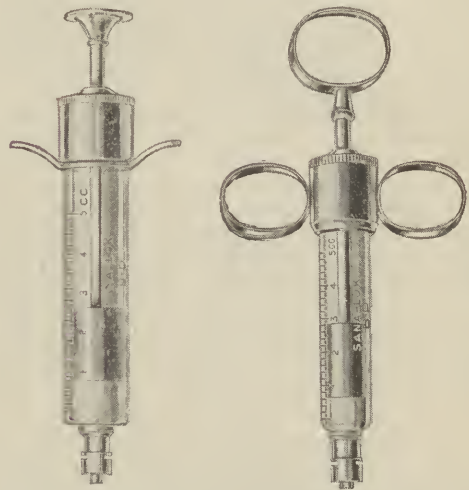
Fifty-two per cent (440) of the 850 patients examined by Albert L. Brown, Cincinnati (Journal A.M.A., July 16, 1927), presented abnormal fundus conditions which were considered to be dependent on some constitutional condition. Eighty-five per cent (374), or 44 per cent of the 850, were considered to be dependent on the acute toxic processes for which the patients were then being treated. The lesions reported exclude all thought to be due to retinal arteriosclerosis, or renal or diabetic diseases. The reactions in the main are simple hyperemia, slight dilatation of the larger vessels, and low grade edema of the disks and surrounding retina, associated with a greater dilatation, depending on the severity of the reaction. There are other changes often seen occurring in the fundi in these diseases, such as retinal hemorrhages, whitish areas of retinal degeneration and occasionally papillitis.

ASTHMA FROM STANDPOINT OF RHINOLOGIST

Edwin McGinnis, Chicago (Journal A.M.A., Sept. 17, 1927), believes in surgical treatment of asthma, the nasal passages being the point of attack. A cure is possible through a careful surgical process that restores the nasal tract to a nearly normal condition, thereby removing the danger of the development of infections such as those referred to above, infections far reaching and often of serious final effect on the human system. In the asthmatic cases in which opera-

tions were performed by McGinnis, the frequent colds have been almost eliminated, and an occasional winter cold has been easily benefitted by simple treatment. The young asthmatic patient is very quickly relieved and in most instances is completely cured. Asthma of long standing in middle aged or old people does not yield readily to intranasal treatment or, in fact, to any other treatment. This is easily accounted for when one considers the peribronchial changes brought about by long continued infection. Clinically, one finds that an anterior ethmoiditis is usually the rhinologic condition found early in the cold, but later the antrums of Highmore may become involved. In children, because of the presence of infected adenoid tissue, the sphenoids and posterior ethmoid cells are also the seat of infection. Diagnosis is based on intranasal visual examination. Bacteriologic examination is helpful.

SANA-LOK SYRINGES



So far it has been imperative while sterilizing a syringe of the Record type to remove the metal plunger from the glass barrel, because, owing to the different ratio of expansion and construction of the glass barrel and the soft metal plunger, the glass barrel breaks.

To overcome this objection, the Sana-Lok and the Sana-Lok Control Syringes have been constructed.

The barrel of these syringes are made of special hard resistance glass and the plungers are of non-corrosive steel. Non-corrosive steel and the special hard glass have the same co-efficient of expansion and construction and it is, therefore, possible to sterilize the Sana-Lok and Sana-Lok Control Syringes without removing the plunger.

Both type syringes have the Luer-Lok arrangement which, by one-half turn, securely locks the needle to the syringe, yet the same can be quickly released by one-half turn to the left. No special needles are required—every Yale Luer needle fits and locks on the Luer-Lok.

The Sana-Lok Syringe has thumb rest and finger bars—the Sana-Lok Control Syringe thumb ring and finger rings.

Capacity of syringes—either 3 c.c. 5 c.c. or 10 c.c.

Made by Becton, Dickinson & Co., Rutherford, N. J.

NEPHROSES

Two cases of so-called nephrosis are reported by J. B. McElroy, Memphis, Tenn. (Journal A. M. A., Sept. 17, 1927). The term nephrosis, like many others in medical nomenclature, is not used in its etymological sense, but having gained widespread use may well be retained to express the primary degenerative changes in the kidneys which these organs suffer by reason of their function as excretory organs. The acceptance of Fahr's classification would do much to satisfy the pathologic and clinical facts and to clarify the present confusion with reference to the subject. Lipoid nephrosis, though rare, occurs as a disease sui generis without the presence of inflammatory lesions in the kidney.

SKIN TESTS IN PATIENTS WITH ASTHMA

In 1,281 patients suffering from bronchial asthma, 23,725 routine tests were made by James S. McLaughlin, Philadelphia (Journal A. M. A., Sept. 10, 1927). Of these, 2,780, or 11.3 per cent, were positive. In 188 completely tested patients there was only one positive reaction; 169 positive reactions were obtained to substances not in the group tested as a routine. By far the largest number of positive reactions was obtained from house dust; 126 patients completely tested gave positive reactions to dust alone. Ragweed pollen tests gave positive reactions in 20 per cent of the patients tested. This figure includes the seasonal asthmas but not hay-fever cases not showing asthma. Coat hair elicited positive reactions in 18 per cent. Chicken, duck and goose feathers gave a fairly large percentage of positive reactions, 19, 17.6 and 14.6 per cent, respectively. Pepper gave positive reactions in 13 per cent.

Wool caused positive reactions in 12 per cent. Orris root, found in nearly all face powders, gave positive reactions in 11 per cent. Cat dander gave positive tests in 8.4 per cent; horse, in 6 per cent; dog, in 4.4 per cent, and rabbit, in 2.5 per cent. Rabbit hair is used in pillows and for stuffing mattresses and furniture. Grass pollen gave positive reactions in 5.6 per cent. The cereals are frequently positive. Rice polish gave 10 per cent positive reactions; buckwheat, 3.4 per cent. Wheat gave 8.5 per cent positives, and cornmeal, 7 per cent. Tobacco gave 8 per cent; pyrethrum, the ingredient in most insect powders, gave 7 per cent.

STUDIES IN TREATMENT OF BRONCHIAL ASTHMA.

H. B. Wilmer, Philadelphia (Journal A. M. A., Sept. 17, 1927), stresses the fact that a case of asthma cannot be successfully treated without careful study threfore, hospitalization for from three to four days is ideal. Operations should not be performed in allergic cases unless a complete survey is first made, as many cases are made worse by too hasty operative procedures. It has been proved that many patients develop a seeming sensitiveness to their own respiratory secretions, and when the filtrates derived from these secretions are used subcutaneously, marked relief has been experienced in cases otherwise unrelieved. Caution should be used in the administration of these filtrates, as severe reactions have been experienced, in the form of asthmatic seizures. One should not hesitate to retest if the evidence is sufficient that there is a specific protein sensitivity, as many patients may not show any reaction today to the test and may be markedly sensitive tomorrow.

Report of Examination for Licenses to Practice Medicine.

Report of Oklahoma Board of Medical Examiners held in Oklahoma City, September 13-14, 1927; number of subjects examined in, 12; total number of questions, 120; percentage required to pass, 75; total number examined, 4; number passed, 4. All applicants, regular school of practice, and licensed by written examination.

NAME	Year of Birth	Place of Birth		Year of Graduation	
Aulick, Roscoe Ratliffe	1889	Reinhardt, Tex.	Baylor Med. Co.	1916	Oklahoma City
Carson, Wm. Samuel, Jr.	1896	Fayetteville, Ark.	Univ. of Tenn.	1924	Keota, Okla.
Dillard, Wm. Hill	1875	Lacrosse, Ark.	Univ. of Ark.	1905	Kingfisher, Okla.
Francis, John Wesley	1880	St. Helena, Ky.	Univ. of Okla.	1911	Red Rock, Okla.
Friedemann, Otto Herman	1897	Kiel, Okla.	Rush Med. Col.	1927	Stillwater, Okla.
Jumblatt, Albert	1886	Sidon, Syria	Jefferson Med.	1924	Canute, Okla.
Moore, Cannon Deugar	1897	Venus, Tex.	Baylor Med. Col.	1927	Oklahoma City
Musick, Vern Hurschel	1900	Brachear, Mo.	Northwestern Med.	1927	Oklahoma City
Mussil, William Marcus	1898	Texas	Baylor Med. Col.	1924	Oklahoma City
Sexton, James Walter	1887	Mt. Judea, Ark.	Univ. of Tenn.	1915	Mt. Judea, Ark.
Smith, John Henry	1875	Paris, Ark.	Univ. of Ark.	1926	Seminole, Okla.
Stewart, Henry Boyd	1896	Mansfield, Ohio	Univ. of Ohio	1923	Tulsa, Okla.
Wade, John Wesley	1875	Kahoka, Mo.	Hahnemann K. C.	1905	Seminole, Okla.
Merritt, Iva Stevens	1900	Gladstone, Manitoba	Univ. Manitoba	1925	Norman, Okla.
Deaton, Andy Newton	1900	Benton, Ark.	Univ. of Ark.	1926	Wewoka, Okla.
Darwin, Wm Cyrus	1886	Evansville, Tenn.	Vanderbilt Med.	1914	Woodward, Okla.
Armstrong, Orville Clayton	1897	Bogard, Mo.	Northwestern Med.	1925	Foss, Okla.
Williams, Charles Sanford	1857	Floydsburg, Ky.	Univ. of Louisville	1880	Joplin, Mo.
Hocker, Alfred Franklin	1902	Audubon, Iowa	Univ. of Louisville	1926	El Reno, Okla.
Andres, Gregorio M.	1898	Philippine Islands	St. Louis Univ.	1925	Wichita, Kan.
Parks, Ben King	1899	Waco, Tex.	Univ. of Illinois	1927	Oklahoma City
McDonald, John Edwin	1903	Markesan, Wis.	St. Louis Univ.	1926	Tulsa, Okla.
Widener, Dean Copper	1896	Hopkins, Mo.	Johns Hopkins	1925	Oklmulgee, Okla.
Johnston, Lanom Samuel	1873	Crystal Springs, Miss.	Univ. of Penn.	1907	Seminole, Okla.
Alexander, T. C.	1901	Meridian, Tex.	Baylor Med. Col.	1927	Oklmulgee, Okla.
Becker, Luther Harrison	1897	Meriden, Kan.	Univ. of Kan.	1926	Blackwell, Okla.
Ducote, Joseph Richard	1876	Louisiana.	Univ. of South	1909	New Orleans, La.

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Meetings held on the second Tuesday and Wednesday in March and September, Senate Chamber, State Capitol, Oklahoma City. Do not address communications concerning State Board examinations, reciprocity, etc., to the Journal or to Dr. C. A. Thompson, Secretary, but to Dr. J. M. Byrum, Secretary of the Board.

The applicants for license, either by examination or reciprocity, if graduating since 1916, must be from a class "A" school. Class "B" schools are recognized previous to 1916. Class "C" schools are never recognized.

Under the present Medical Act, reciprocal endorsements are received from any State, providing the applicant graduated from recognized schools. The license upon which reciprocity is based if issued since June 12, 1908, must have been by examination. Previous to that date, a license issued upon diploma without examination may be recognized. Credentials from the National Board are recognized the same as reciprocity.

The examination fee is \$25.00; the reciprocity fee is \$100.00. Endorsement from the National Board if an established practitioner, is \$100.00; if a beginner, \$25.00.

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"THE TOXEMIAS OF PREGNANCY"*

T. H. MCCARLEY, A.B., M.D., F.A.C.P.
MCALESTER

Of all the commands given unto man in Holy Writ, none have been more literally and faithfully obeyed than this: "Go forth, multiply and replenish the earth." In nature's order of things, the daughters of Eve have borne the physical distress entailed by the fulfillment of this command. How soon after procreation began, the mothers of men suffered from the toxemias of the pregnant state, I do not know. We find in the writings of the fathers of all things medical, Hippocrates and Galen, references to the diseases recognized today as the toxemias of pregnancy. Through the advancing centuries, a clinical conception of hyperemesis and eclampsia was evolved. For scores of years methods of treatment similar to those now in use have been employed, including purging, venesection and the administration of sedatives and alkalis. We know now little more than was known 125 years ago about the precise etiological factors underlying the production of these various abnormalities in the pregnant state. However, enough is known about their cause and treatment to warrant the application of certain measures which will lower the present all too high mortality. Preventive measures have especially proved their value.

We shall consider the toxemias of pregnancy under the headings: hyperemesis, preeclamptic toxemia and eclampsia, with only a passing reference to acute yellow atrophy of the liver and nephritic toxemia. This classification, according to the late studies of Dr. J. Whitbridge Williams and his associates, should be revised so far as the toxemias of the later months of pregnancy are concerned. The classification suggested is eclampsia, preeclampsia, chronic nephritis, eclampsia superimposed

on chronic nephritis, and low reserve kidney. It seems that most of the cases which heretofore have been considered preeclampsia should really be classed as those of low reserve kidney. For the discussion of this aspect of toxemia, you are referred to the article by Dr. Williams indicated in the bibliography.

Vomiting in greater or less degree occurs in more than fifty per cent of cases, beginning at the end of the first month and continuing ordinarily until the third or fourth month. A classification based on the supposed etiology was until recently accepted as, reflex, psychic, and toxic. It is now maintained that every case of vomiting, however mild, has a toxic cause. If this be a specific toxin, it has not been identified, though it seems to me that the preponderance of evidence is that it is of fetal origin. The most marked pathological finding, in fatal cases, is a necrosis of liver cells beginning at their central portions and extending to the periphery. There is abundant evidence that these cases have a deficiency of glycogen in the liver which may lead to a fatty infiltration of that organ.

A patient presenting herself with a history of vomiting associated with amenorrhoea, should first of all be subjected to a careful general physical examination, with especial attention to foci of infection. After this has been done and the condition of the heart, lungs, kidneys, digestive system, etc., determined, a careful pelvic examination should make known the position of the uterus and the condition of the cervix. Malpositions of the uterus are frequently associated with the nausea and vomiting of pregnancy. A retroverted uterus in a primipara may be accepted as the congenitally normal position of the organ and need not be corrected. In a woman who has borne children, retroflexion may be acquired, and if so, it is ordinarily, a simple matter to replace it, if it is not adherent. The patient is placed in the knee-chest position, a Sims' speculum is introduced and held by an assistant, the cervix is grasped with a tenaculum and

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while gentle traction is made, pressure with a wad of cotton on a dressing forceps is made on the uterus through the cul-de-sac. Hyperemesis has been attributed to any one of a number of cervical lesions, including stenosis, erosions, chronic inflammation of the canal, and lacerations, which have their appropriate treatments. Stenosis should not be interfered with as dilation of the cervix produces uterine contractions. Erosions and inflammation of the cervical canal may be treated, with little risk of producing abortion, by applications of silver nitrate solution and glycerin tampons.

General hygienic and medical measures are to be instituted in all cases and, in the milder ones, they often suffice. In the first place, the patient must be given a certain amount of rest in addition to the usual sleeping period. Early breakfast and regular meals are advised. The diet schedule provides for the avoidance of all meat, soup and fats, with the free use of cereals, stewed fruits, oranges, fresh vegetables and breadstuffs, taking six rather than the three usual daily meals. From one to three pints of water in which two or three teaspoonsful of milk sugar are dissolved must be taken each 24 hours. If there is complaint of "acid stomach," the patient should take a teaspoonful of bicarbonate of soda in a glassful of water on retiring. Corpus luteum, three gr. given hypodermically, one to three times in 24 hours, may be given and seems to have a specific effect in some cases. The bowels should be kept open with mild laxatives.

The patient failing to improve on the above regime, the following more strenuous routine is advised. The first essential is a quiet, well-ventilated room, which can be darkened, either in the patient's home or preferably in the hospital, and absolute rest in bed with no visitors. Beginning in the morning, a cleansing enema is given to which may be added glycerin in the proportion of one-half ounce to the quart. After this has been expelled, eight ounces of a solution of glucose, three or four drams, and sodium bicarbonate, one dram, is given by rectum. This rectal infusion is repeated at twelve, four and eight o'clock. If the skin is dry and does not seem to function well, a hot pack lasting from 10 to 20 minutes may be given after the eight p. m. rectal infusion. This will usually insure the distribution of the circulating blood under the skin, bring about perspiration, make the body desir-

ous of more fluid and induce a quiet sleep. Nothing whatever is given by mouth until the vomiting begins to lessen, when small doses of hot water or weak lemonade may be taken with a mouthful or two of crackers or toast. The rectal injections may be kept up for several days without producing any irritation. If the patient cannot sleep, 15 grs. of chloral may be introduced into the evening glucose instillation. The intravenous injection of 240 cc. of a twelve and one-half per cent solution of glucose often gives striking results in severe cases. It is assumed that this is effective by reason of supplying the liver deficiency in glycogen. I do not hesitate to state that the use of carbohydrates by mouth, by rectum and by vein is the outstanding development of recent years in the treatment of the vomiting of pregnancy. For intravenous use, three of the 20 cc. ampules of 50 per cent solution glucose (dextrose) may be added to 180 cc. of distilled, sterile water and given very slowly by means of an ordinary salvarsan outfit. The strictest aseptic precautions must be observed.

If some system of treatment in keeping with the above suggestions is carried out, the cases requiring therapeutic abortion will be rare. However, if the patient fails to show any change for the better within a few days, and if the acidosis, as shown by daily urine examination, does not improve; if vomiting of bile-stained fluid or coffee-ground material persists, if the yellow staining of the skin and sclera grows deeper; if the blood pressure falls and the pulse rises day by day; if the urine becomes less in amount and of a greater specific gravity, the uterus should be emptied. The technique of gradual dilation and cervical packing, one or more times at 24-hour intervals, followed by gentle removal of the product of conception under light anaesthesia is advised in preference to the one-stage, forceful dilatation and curettage.

That extremely serious condition, acute yellow atrophy of the liver is accompanied with nausea and vomiting. In addition, there are more pronounced jaundice, coated tongue, dry skin, periods of depression alternating with delirium, and convulsive movements, usually of the extremities. Purpuric skin spots and the finding of leucin and tyrosin crystals in the urine usually precede the fatal issue. It may be difficult to draw a close clinical distinction between an actual acute yellow atrophy of the liver and hyperemesis, as

marked degrees of jaundice often accompany the latter, but while emptying the uterus often stops the vomiting, it has no effect on the liver atrophy.

By the nephritic toxemia of pregnancy, we mean a toxemia developing during pregnancy resulting from a nephritis. The kidney in such cases has usually been damaged by some previous infection, as scarlet fever or tonsillitis, and a latent nephritis existed previous to pregnancy which became acute from the stress of pregnancy. Following delivery, the urine and blood-pressure rapidly return to normal in eclampsia, but not so in nephritis. At the time it is discovered, it is often impossible to differentiate this from pre-eclamptic toxemia; certainly not without the use of blood-chemistry. The differentiation is not essential from the standpoint of treatment.

Pre-eclamptic toxemia usually comes on between the seventh and ninth months, and may be associated with a varied train of symptoms. The milder cases are characterized by headache, melaise, a moderately high blood pressure and more or less edema of the extremities. In the more severe cases, pain in the epigastrium, persistent headache and visual disturbances, including spots before the eyes, inability to read, or attacks of dizziness, are present. Mental disturbances are also frequent and the patient may present various types, ranging from irritability to a state which closely resembles insanity. In some cases, sleeplessness is complained of, in others the patients are drowsy and stupid most of the time. Where the symptoms are not checked, the condition may pass into eclampsia marked either by convulsions or a profound coma ending in death. A characteristic feature of this condition is the reduction in the amount of urine, which may be as low as 10 to 15 ounces in 24 hours, containing albumin, casts, and sometimes blood cells. The chief pathology is found in the liver where there is a necrosis beginning in the periphery of the cells and extending toward the nuclei.

The diagnosis of pre-eclamptic toxemia may be made early only by regarding every case of pregnancy as one of possible toxemia, watching carefully for the first danger signal and treating it promptly. At the risk of repetition, the symptoms may conveniently be considered under four heads: First, those referred to the urinary system; second, the circulatory

system; third, the nervous system; fourth, the digestive system.

The presence of albumin in the urine even though the amount be slight, should always excite the keen attention of the physician, especially if it is found at repeated examinations. A few hyaline casts may be present and the 24-hours' quantity is diminished.

Symptoms referred to the circulatory system are usually the first to be observed, edema being the most prominent and distinctive. Some slight swelling of the feet is common enough in the later months of pregnancy especially in multiparae. It is especially noticeable when the patient has been on her feet during the day and is often associated with varicose veins. When, however, it is at all noticeable, or when it occurs in a primipara, or if it is present when the patient arises in the morning, it is to be treated seriously. A systolic blood pressure above 140 is highly suggestive.

Among the symptoms referred to the nervous system, headache is especially prominent. Nervousness, irritability, insomnia, twitching, vertigo, and ocular disto to the early months of pregnancy. Nausea and vomiting occurring in the latter months, however, are often toxic in origin. The same thing is true of unusual or obstinate constipation. Any kind of epigastric or abdominal pain not connected with uterine contractions is to be regarded with suspicion.

I have enumerated under the four headings the essential symptoms of the pre-eclamptic state. The physician should never forget to seek for them even though the patient makes no complaint. Not all these symptoms are present in every case, nor are they always pronounced; but to wait until the clinical picture is unmistakable, before instituting treatment, may be to wait too long.

In neglected or untreated cases, and very rarely, in spite of treatment, things go on from bad to worse. The amount of albumin increases and epithelial and granular casts appear in abundance. Edema of the face shown especially by puffiness under the eyes may be present. Severe and persistent headache is common at this time and the patient may partially or completely lose her vision. Vomiting and epigastric pain are characteristic. Contraction of the pupils is an ominous sign. Pre-eclampsia fulminates into eclampsia, the distressing clinical picture of which is so

well known that I shall spare you its description.

The first manifestations of toxemia should be the signal for the institution of treatment, the earlier the better. First and most important, the patient should be put to bed. How often one finds a pregnant woman with albuminuria and swollen ankles doing her housework and burdened with all sorts of domestic cares. Theoretically, the demands on her resources should be minimized, and as a matter of everyday experience, these patients improve rapidly if kept in bed for a time. If the patient cannot or will not do this she should be advised to refrain from work and worry as far as possible, to retire early, and to lie down for two or three hours every day.

The patient should be put upon a milk diet, which may be modified to vary monotonously. An occasional cracker or stalk of celery serves to encourage the patient, promotes the flow of saliva and does no harm. This diet should be continued until there is a decided improvement, and the resumption of the usual diet should be gradual and provisional, the carbohydrate foods being added first and meat not at all. Water should be taken freely if edema is not marked.

Saline cathartics should be administered in quantity sufficient to produce one to two watery movements a day for several days. Cream of tartar lemonade and Basham's Mixture enjoy good reputations as diuretics in this condition.

Elimination by the skin should be encouraged. A daily sponge bath is advisable, and if the symptoms are threatening, the hot pack often brings improvement.

An abundance of fresh air must be available day and night. Shears advises the administration of oxygen.

If, in spite of treatment, the symptoms get steadily worse, the induction of labor or Caesarean section must be considered, but such instances will be rare indeed, if treatment is carefully and faithfully carried out.

In the treatment of eclampsia, a heated controversy has raged between those who advocate immediate Caesarean section in every case and those who advocate a more conservative course. It may now be definitely and positively stated that the conservative treatment offers the better prognosis as to mortality and morbidity of both mother and child.

The treatment which I follow and which I shall outline is that of Ross McPherson, head of the great Lying-In-Hospital in New York City. This is a modification of the treatment of the Rotunda Hospital of Dublin, which is in turn a modification of the treatment of the Russian Stroganoff. This routine is based upon the meeting of the following indications: 1. The suppression of the convulsions and the promotion of muscular relaxation. 2. The promotion of elimination. 3. The reduction of the blood pressure.

If not already in a hospital, the patient should be transported there if at all feasible. One-half gr. morphine should be given at once and supplemented, if need be, by the inhalation of ether, to control the convulsions during the journey to the hospital. The blood pressure is taken and a catheterized specimen of urine is obtained. She is put into a darkened room which is kept quiet. Her stomach is washed out, two ounces of castor oil are poured down the tube at the end of the lavage and she is given a colonic irrigation of five gallons of five per cent glucose sal or tap water, never salt solution.

If the blood pressure is over 175, a phlebotomy is done, and a sufficient quantity of blood is extracted to bring the pressure down to 150.

The patient is now kept very quiet and one-fourth gr. of morphine given every hour until the respirations drop to eight per minute. At this time, convulsions have usually ceased, labor will have commenced and a natural or easy low forceps delivery can generally be effected. A little ether may be needed to control the convulsions while awaiting the effect of the morphine.

Eclampsia, even under the most favorable circumstances, is a fearful disease and will inevitably tax the medical attendant's powers to the utmost. The pressure brought to bear on the physician to "do something quickly" is very likely to warp his judgment and induce him to act contrary to the dictates of his own uninfluenced opinions. The consulting surgeon who thinks largely in surgical terms, is prone to perform a Caesarean section. It is not easy for the obstetrician who elects to conduct the case along conservative lines extending over some hours.

In closing, let me say that by far, the best treatment of eclampsia is prevention. Every pregnant woman should be under

skilled supervision throughout the gestation period. The first signs of toxemia should be noted and proper treatment given before irreparable damage has been done. The burden of spreading this gospel rests upon us as general practitioners, for it is we who, in the vast majority of cases, first see these patients, and it is we also, who come closest to the lives and minds of the general public, who must need be awakened to the necessity of taking these precautions.

"The woman about to become a mother should not be the object of trembling care and sympathy wherever she bears her tender burden or stretches her aching limbs. God forbid that any member of the profession to which she trusts her life, doubly precious at that eventful period, should hazard it negligently, unadvisedly or selfishly."

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PHYSIOTHERAPY, A NEGLECTED AID IN OBSTETRICS AND GYNECOLOGY*

ALBERT C. HIRSHFIELD, B.S., M.D.
OKLAHOMA CITY

It is said that "There is nothing new under the sun." This is especially apropos in physiotherapy since our armamentarium in this branch of therapy consists solely in the natural agents, especially those imitating certain of the sun's rays, namely the infra-red or the heat rays of the lower end of the spectrum and the ultra-violet rays of the upper end of the spectrum. We all know that physicians from time immemorial have, to a greater or lesser extent, availed themselves of the curative effects of the various physical agents, especially those of light, heat, and cold. Even medical literature of the ancients contains numerous references, direct or implied, of the healing effects of these physical agents.

Therefore, the present science of physiotherapy is modern only in its technique or method of application. As the scope of this paper is purely that of clinical sug-

gestion, we shall refrain from going into the fundamental physics of the science or the details of the technique of the same.

As the subject of physiotherapy is obviously very extensive even if confined to a special branch of medicine, we shall attempt to but lightly sketch an outline of the subject, with the suggestion that those interested will find further investigation of the subject both interesting and profitable. For the above reason we shall consider only three of the principal modalities, namely, high frequency or diathermy, the infra-red or heat rays, and the ultra-violet or alpine sun rays as produced by the quartz lamp. Nor shall we let our enthusiasm lead us to make any concrete case reports lest some of our apparently successful cases return later to prove that our cures were but temporary or perhaps existed only in the minds of patient and physician. However, we do firmly believe that not only is there a definite field of usefulness of physiotherapy in our special branch, but that the psychology of our treatment is fundamentally sound. The psychology of our treatment is a feature that is too often overlooked, especially in handling diseases of women, which are as often functional as organic and generally are indissoluble mixtures of the two. When a woman receives physiotherapy, she immediately perceives a reaction in the tissues, generally in the neighborhood of her pain or discomfort. This is not often the case when treated by medicine or glandular extract, or even by the so-called gynecological local treatment. It is not unreasonable to believe that the psychology of treatment applied directly to the seat of bodily pain or discomfort is more or less responsible for the success, that is worldly success, of our would-be colleagues of the various cults and "pathies."

OBSTETRICS

The indications for physiotherapy in obstetrics are somewhat circumscribed since pregnancy is theoretically, at least, a physiological process requiring but watchful care and general hygienic management. However, the economic and physical environment of many of our patients is such that they can not receive the full benefit of the hygiene of natural physical agents and must be aided by artificial measures substituted by the obstetrician. Therefore, any condition of pregnancy accompanied by an alteration of the normal metabolic processes in which an abundance of natural sunlight would be

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helpful will be benefitted by the judicious irradiation with the quartz alpine lamp. This treatment is especially indicated in the anemias, chlorosis, disorders of calcium metabolism, neurasthenia, asthenia and other conditions of lowered metabolism without demonstrable organic pathology. Since the ultra-violet ray is practically a specific in the prophylaxis and treatment of rickets, it is logical to assume that radiation of the expectant mother is a valuable prophylactic against the development of rickets and other disorders of calcium metabolism in the infant. This is now definitely proven by the investigation of Hess and others. The Alpine or quartz lamp may be said to be indicated in general wherever a general tonic effect is desired for the benefit of mother and babe.

High frequency effluve or auto-condensation, by means of diathermy, is useful for its general stimulating and equalizing effect on the circulation in cases of high blood pressure of pregnancy, especially in those early cases of toxemia in which a heightened blood pressure is the only demonstrable sign of a faulty metabolism. A careful and frequent check of the blood pressure of our ante partum patients will often detect a beginning toxæmia of pre-eclamptic condition, days, if not weeks, before the urine shows any evidence of altered kidney function. If these cases are detected early and vigorously treated by the proper dietetic and hygienic measures and if possible, aided by frequent general diathermy or auto-condensation treatments, the rising blood pressure can be checked and even lowered and the expectant mother safely piloted through a satisfactory pregnancy and labor.

Another indication for physio-therapy in pregnancy is found in those cases of ill-defined pain and soreness in the pelvis without demonstrable local pathology. Whether this condition is due to the stretching of the muscle and nerve fibers of the uterus and pelvic ligaments, functional changes in the ovaries, pressure effects, or pure neuroses, we cannot say, but we do know that the discomfort of the patient is often very real and she demands relief. In these cases, we have gotten more from a moderately intense radiation with the infra-red lamp than anything we have tried. Formerly, we treated these cases with a mild application of diathermy directed between hypogastric and sacral electrodes and received fairly

satisfactory results. However, since it now appears that diathermy applied to the pregnant pelvis is not without danger, we use only the infra-red lamp, and we believe, with somewhat better results. While our experience is wholly empirical, we have nevertheless received very comforting results in a few cases of migraine in early pregnancy by the application of infra-red heat to the epigastric region, supplemented in some of the cases with auto-condensation.

GYNECOLOGY

The indications for physio-therapy in gynecology are almost as numerous as the various diseases and disorders included in this branch of medicine. While not ultimately curative in all, physio-therapy in some form is helpful in a great many of the gynecological disorders. We must admit that the majority of major diseases of women must ultimately seek surgery for permanent relief. Yet there are many more or less border-line cases in which the gynecologist hesitates to recommend a major surgical procedure for symptoms of doubtful seriousness. There are also a great many more cases in which surgery is definitely indicated yet the patients feel that the risk and inconvenience of an operation outweigh the discomfort and inconvenience of the ailment. Naturally these women are entitled to as much relief and comfort as can be afforded them without surgery. If physio-therapy helps to give this relief, it is worthy of a niche in the medical world of usefulness. Then, again, there is a third class of cases, such as functional amenorrhea and dysmenorrhea, endocervicitis, specific and non-specific, certain cases of post-operative adhesions and exudates, inoperable malignancies, etc., in which physio-therapy is distinctly indicated and offers, we believe, more than any other present method of treatment.

If this or any other group of gynecologists or general practitioners were asked to name the two gynecological disorders most common and yet most difficult to successfully treat, nearly all would, I believe, reply that they were dysmenorrhea and endocervicitis. In fact, it was chiefly these two conditions, especially the latter, which caused us to first consider installing physio-therapy apparatus in the realization of our helplessness in the average case of these disorders with the ordinary form of therapy. Naturally, I am happy to report that my own brief experience,

corroborated by that of many others, leads me to the conclusion that physio-therapy, especially diathermy, has a very distinct field of usefulness in these disorders and in the majority of such cases will give quicker and more definite relief than any other form of treatment.

In considering dysmenorrhea, we must first always bear in mind that in this, as well as in any other condition of obscure etiology, a careful history and thorough physical examination will often reveal an underlying pathology or dyscrasia which must be remedied before any considerable measure of relief can be expected. Naturally, one should not expect physio-therapy to relieve dysmenorrhea caused by uterine displacement, ovarian disease, chronic tubal or appendiceal disease or other definite etiological factors. But we all see a good many cases of dysmenorrhea especially in young girls in which we fail absolutely to find any definite cause, these are the so-called functional, neuralgic forms of dysmenorrhea, and are the ones in which diathermy is especially indicated. The treatment in brief consists in daily diathermal radiations beginning from four to seven days before the expected onset of the period. In young girls, we use external electrodes only, one placed supra-pubically and the other under the back in the sacral region. In married women, and girls whose vaginas will permit it without too much discomfort, we use a vaginal electrode with a cup-shaped depression in which the cervix rests. This is used in conjunction with either the supra-pubic or sacral plate or both. The treatment with the vaginal electrode is naturally more satisfactory as the heat can be more definitely localized in the uterus and cervix, and also because the degree of temperature can be accurately regulated by means of a thermometer passed down the center of this electrode. In a few cases in which women came into the office actually cramping we have relieved them as quickly with diathermy as we might have with a hypodermic, a comfortable flow sometimes starting before the patient left the office. One should preferably, however, discontinue diathermy 24 to 36 hours before the onset of the flow, as there is some danger of producing menorrhagia, especially if too strong a treatment is given.

In the treatment of endocervicitis with medical and surgical diathermy we have probably the most effective treatment possible except a radical operation. In fact,

we feel that, with the recent advances made in the treatment of this condition with medical diathermy in the milder cases and surgical diathermy, i.e. electro-coagulation or cauterization, in the more severe cases, plastic operations for the relief of endocervicitis are rapidly becoming passe. Plastic operations on the cervix filled a very necessary niche in the treatment of this condition in years past, for then we had no other treatment but the so-called local or topical applications of silver salts and other astringents and the use of douches at home. When we consider that the pathology of endocervicitis exists chiefly in the deep cervical glands we can appreciate that the treatment of the same with douches and applications to the mucous surfaces is little more than a farce. This condition of affairs then made necessary the plastic operations, such as amputation of the cervix, the Sturmdorff and Schraeder operations, etc. Relief of the more aggravated cases of cervical disease. These operations, while often curative, are far from ideal for several reasons. In the first place, while they appear simple and easy of execution in the text and illustrations, they are far from being simple surgical procedures in the average cases. As it is impossible to keep the sutures dry or even under observation, the results of a brilliant operation is apt to be marred by the untimely cutting out or dissolution of the sutures. But the chief objection to these radical operations on the cervix is that they are all more or less mutilating and leave considerable scar tissue, the result of which in a future labor is more or less problematic. Therefore, we have for a number of years refrained from doing the radical plastic operations on women still in the child-bearing age. This does not, of course, apply to simple trachelorrhaphy for ordinary cervical lacerations. Finally, we have found it rather difficult to induce patients to consider undergoing a surgical operation and a fortnight in the hospital for the relief of nothing more than leucorrhea, even though severe and protracted.

But in diathermy we have a definite and accurate method of applying heat of any desired temperature directly to the cervical tissues. In the milder cases, we secure satisfactory results from the use of the vaginal electrode fitted to the cervix described in a preceding paragraph. For the more deeply seated infections, there is an electrode perfected by Corbus and O'Connor that is inserted directly into the

cervical canal, with a thermometer in the core of the same. It can readily be seen that this treatment can be made specific for gonorrheal endocervicitis, since it has been proven that the activity of the gonococcus is inhibited by a temperature of 104F. and instantly destroyed by a temperature of 113F. The only difference therefore, between the treatment of ordinary catarrhal endocervicitis and gonorrheal endocervicitis is a difference in the degree of heat produced in the tissues of the cervix. Finally, in the otherwise intractable cases we have a weapon of last resort in electro-coagulation by diathermy or ordinary electric cauterization of strips of the cervical mucosa. This treatment destroys the cervical glands any degree indicated, and the resulting cicatricial contraction produces a cervix reduced in size and glandular activity.

There are many other indications for physio-therapy, but we can not cover them all in a paper of this scope. One very useful indication is the removal of urethral caruncles, ordinarily rather refractory to operative removal, by diathermy or electro-coagulation. This also applies to other small tumors, cysts, hemorrhoids, and so forth. In short, diathermy will be found effective in many minor surgical conditions that in the past have been amenable only to operation.

In conclusion, however, let us insist that we do not believe that physio-therapy in any or all of its phases is in any sense a "cure all" or panacea, but merely a very useful adjunct to our only too limited therapeutic armamentarium in obstetrics and gynecology.

THE KIDNEYS DURING PREGNANCY*

E. EUGENE RICE, M.D.
SHAWNEE

Pregnancy is a physiological function which is a severe test of the entire body metabolism of which the kidneys are the most vulnerable part during this period and quickly show the results of this severe strain.

Changes in the kidneys play a very important role throughout pregnancy and there is no part of our obstetrical responsibility as great as that of the careful obser-

vation of the urinary changes and blood pressure readings as in this way, serious kidney infections and toxæmias may be anticipated and prevented.

Normal urinary findings in pregnancy vary slightly from the normal. The quantity is usually increased about one-fourth with a consequent frequency of urination. Albumen is present in about one-third of all cases sometime during pregnancy, usually due to some slight abnormality, such as catarrh of the bladder, urethritis, or may be vaginal. Casts are never found normally and are indicative of serious trouble. Sugar is found occasionally and is usually lactose or dextrose and caused from beginning lactation.

It is estimated that fifty per cent of pregnant women are afflicted with some type of renal infection and only by constant observation and anticipation can the accoucheur prevent many severe complications of pregnancy.

CLASSIFICATION

Renal diseases during pregnancy are in the most part similar to renal diseases at any time and may be the cause of the complication, as in the case of pyelitis and other infections, or as a result of the disease, as in the toxæmias.

A simple classification is as follows:

I. INFECTIONS.

1. Simple pyelitis.
2. Pyelitis with retention.
3. Pyonephritis and pyonephrosis.
4. Tuberculosis.

II. INFLAMMATIONS.

1. Acute nephritis.
2. Acute nephritis with edema and hypertension.
3. Chronic nephritis.
4. Chronic nephritis with edema and hypertension.

III. THE TOXAEMIAS.

1. The early toxæmias.
2. The late toxæmias.

INFECTIONS

Infections of the kidney are caused by the saprophytic organisms, usually *B. Coli*, *staphylococcus*, and *streptococcus*. The mode of infection may be either ascending from the bladder (the method usually accepted) or may be hematogenous or lymphogenous.

These infections include:

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Simple pyelitis which may be so mild that it is difficult to recognize or found only by routine urinalysis. It is the more severe types with pain and hyperpyrexia, loss of appetite, often chills and toxæmia, with urinary findings of large amounts of pus, with albumin present, often hematuria, and with positive urine cultures that necessitate attention.

Pyelitis with retention is often due to pressure and obstruction, most frequently occurring on the right side, usually taking place at the brim of the pelvis, and may be due to pressure of the pregnant uterus on the ureter, pressure of the head of the child, or congestion and swelling of the mucus membrane of the bladder. This obstruction augments the ease of infection and the organism finds a ready culture media upon entrance. Here a complete urinary examination is necessary for differentiation and often ureteral catheterization for drainage and with position may quickly correct the condition.

Pyonephritis and pyonephrosis are very serious complications and cystoscopy and pyleography are necessary for diagnosis where ureteral catheterization, drainage, and lavage may be found adequate while others may require surgical intervention.

Tuberculosis of the kidney is a serious problem and pregnancy aggravates the condition that otherwise might remain latent. This condition is often difficult in diagnosis and the proper treatment depending upon the ability of the patient to carry the pregnancy to term.

INFLAMMATION

Inflammation of the kidneys is caused from a toxæmia which may have been pre-existing, or by the extra demands of pregnancy.

Acute nephritis without edema or hypertension is the most frequent in occurrence and should be a warning to the accoucheur of impending danger. The urinary findings here are the presence of albumin of variable amount with the presence of casts. The blood chemistry and the renal function remain normal.

Acute nephritis with edema and hypertension is usually found pathologically to be a glomerulo-nephritis. Here there is a hypertension in which the blood pressure readings average about 150 systolic and 100 diastolic. Edema is usually present and the renal function is about 35-40 per

cent with a blood urea averaging 34 mg. per 100 cc. of blood. Fundus changes are rarely found.

Chronic nephritis without edema or hypertension usually has pre-existed before pregnancy and here the urine persists to show albumin and casts without the general signs of severe renal damage or disturbance of renal function and no cardiac hypertrophy is found.

Chronic nephritis with edema and hypertension usually shows an acute exacerbation during pregnancy of a previously present condition. The blood pressure readings average 190 systolic and about 115 diastolic. Fundus changes are present in about 25 per cent. The renal function averaging about 35 per cent and the blood urea 100 mg. per 100 cc. of blood.

THE TOXAEMIAS

The kidney toxæmias are not the cause of the disease but are often found in women who are handicapped by a more or less severe nephritis and in whom the extra demand of pregnancy may produce a toxæmia akin to uremia with or without convulsions. Although often women with impaired kidneys have no complications while others with apparently normal kidneys succumb to the toxæmias.

The early toxæmias are characterized by nausea and vomiting of variable degree from a slight distaste for food to marked dehydration. The urinary changes show a volume which is low with a consequent high specific gravity. Albumin is almost invariably present and acetone bodies are present in the marked cases due to a disturbance of liver function.

The late toxæmias are not usually so gentle in their onset and here the careful routine observation of the urine is paramount as this warning may not be present until near the onset and here the signs of renal involvement has a direct relation to the diagnosis on the oncoming toxæmia.

The onset here is usually albuminuria, casts, a high blood pressure and edema and often convulsions. The prognosis is often grave if the case has been neglected to this stage as our mortality per cent in the late toxæmias has shown little improvement in the past 100 years.

CONCLUSION

Let us all consider our expectant mothers as a potential source of renal involve-

ment and remember that the urinary signs or renal infection have a direct relation to the diagnosis of the kidney involvement.

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MANAGEMENT OF OCCIPITO-POSTERIOR POSITIONS OF THE FETAL HEAD IN LABOR*

R. H. HARPER, M.D.
AFTON

I mean by this position any case in which the fetal occiput is in the posterior half of the pelvic cavity; usually there is an obliquity to the right or left, but this makes but little practical difference.

I shall not take time in giving pelvic or fetal measurements, or possible causes of this position but consider what is to be done when in the presence of an actual case; the labor is usually prolonged, pains inefficient, the head high up, the cervix slow in dilating, and usually, the suspicion of mal-position can be confirmed by the presence of the fetal limbs in front, as can be felt through the abdominal wall of the mother; but nothing can be done, nor should be attempted, until dilatation is complete, and the cervical ring entirely off the fetal head.

Figures given by Bacon, of Chicago, show that about six per cent of all labors have this presentation, and of these, one half will be corrected spontaneously, and the other three per cent will need assistance, manual or mechanical, or both.

My own procedure for many years past, is to anaesthetize the mother to the degree of complete relaxation, and suppression

of uterine contractions, and after suitable preparation, introduce the hand and seize the head; if the abdominal wall of the mother is thin, or well relaxed, rotation may be accomplished by manipulation with the external hand on the abdomen, and at the same time, turning the fetal head, which may then be held in position until the uterine contractions recur to resume normal labor; but if this cannot be done I push the hand past the head, seize the presenting shoulder, and, with assistance of the external hand, rotate the shoulders and the body, and then, withdraw the hand to a point when the head can be seized, and proceed as before; this requires but little more manipulation, and obviates the risk of too much strain on the fetal neck; at this stage, a dose of pituitrin will aid in the further progress, but it is useless to give it until the uterine contractions begin to recur; in about half the cases, spontaneous delivery will follow, but if not, for any reason, I do not wait long before applying forceps, and with an episiotomy to prevent a tear, terminate the labor, rapidly, but with the least possible use of force.

Smith, of Brooklyn, used manual rotation in 82 out of 2000 cases of labor; he says that it is of great benefit to mother and child, because of the shortening of labor, and diminution of trauma to both; besides this, I find an especial benefit to the mother in preventing exhaustion, and a much better chance for the life of the baby; less liability of infection to exhausted and lacerated vaginal and uterine tissues; it is usually done easily, as I have had but one case that was difficult enough to remember it especially.

I have not used the Kielland forceps, but have read the extensive review of the literature by Greenhill, of Chicago, in the Journal of Obstetrics and Gynecology, March, 1924, and one giving the technique in detail, by Jarcho, in the same Journal, July, 1925; some of the writers quoted by Greenhill say that they are better for any forceps delivery than the older styles; I am favorably impressed with them, and probably shall use them; one objection that occurs to me is that rotating the fetal head one half turn in the actual occipito-posterior position would be a great strain on the neck without at least a partial rotation of the shoulders at the same time: but as none of the writers mention this, it may not be a valid objection.

Anyone can give the care necessary in

*Read before the Section on Obstetrics and Pediatrics, Annual Meeting, Oklahoma State Medical Association, Muskogee, May 4, 5, 6, 1927.

an ordinary case of easy labor; it has occurred millions of times with no care at all; but these difficult cases that in former times terminated fatally to both mother and child, are the ones that need our best efforts to bring them through a difficult situation, preserve the health, and often the life of mother, or child, or both. I say child advisedly, because birth traumas may be followed by serious results in after life, by actual neuroses and psychoneuroses, as has been abundantly demonstrated by Freud and his followers.

I have purposely made this a short paper with the idea of considering but the one thing, the best procedure when confronted with an occipito-posterior position of the fetal head; I am fully aware that there are other methods, and shall appreciate a critical discussion.

One might quote a whole page of literature, but the following are pertinent, and to the point.

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EXTRA UTERINE PREGNANCY*

FENTON M. SANGER, M.Sc. M.D.
INSTRUCTOR IN GYNECOLOGY, UNIVERSITY
OKLAHOMA
OKLAHOMA CITY

EXTRA UTERINE PREGNANCY

Outside of the uterus pregnancy may occur in three sites.

1. The ovary.
2. The peritoneum.
3. The tube.

Ovarian pregnancy is rare, yet there is on record a goodly number of authentic cases. In this location the ovum is fertilized in the follicle by the spermatozoon. The spermatozoon gains entrance through the opening by which the ovum is about to be dehiscid. In this condition the earliest stages of pregnancy occur in the ovary,

the tissues of which are stretched over the expanding embryonic sac.

The tissue of the ovary is torn up by hemorrhage incited by the stimulus of the growing chorion, and in most cases the pregnancy is brought to an end by intraperitoneal rupture of the sac, which is usually accompanied by profuse internal bleeding. Should the ovum persist in growing beyond a certain limited size, the enlarging sac gradually wears through the surrounding tissue of the ovary and encroaches upon the surrounding structures, namely, the tube, uterus, bowel, et cetera, which are incorporated as new boundaries for the sac. Ovarian pregnancy at this stage is difficult to differentiate from a tubal pregnancy. The confusion is so easy that before a gestation sac can be declared to be ovarian, it is necessary that the tube on the same side should be free from the ovary throughout its whole length.

Ovarian pregnancy closely simulates tubal pregnancy in its pathology, and in its symptoms; signs and treatment are the same.

Abdominal pregnancy—A primary engrafting, in the lower animals, of a fertilized ovum on the wall of the peritoneum in the pelvis has been described, and it is possible that, in the human, the same aberrant site may be the seat of pregnancy. However, it, no doubt, is of extremely rare occurrence.

Tubal pregnancy—The most common site for extrauterine pregnancy is tubal. It is a condition of comparative frequency.

Etiology—The factor responsible for tubal pregnancy is obstruction of the passage of the ovum. Congenital conditions may be the cause of this, such as a local or general infantile narrowing of the tube, or the persistence of the convolutions, which is normal to the fetal tube, or tuberculous diverticula may extend from the mucosa into the muscular wall of the tube, and into one of these an ovary may stray. However, the most common causes are acquired, and of all these, salpingitis is the chief cause. There may be operating here several actual factors, as fusion of the folds forming crypts and lacunae, or an inflammatory incursion of tubular growths of the mucous membrane into the muscular wall may form diverticula, or deficient peristaltic contraction of the muscles of the tube, or a kinking of the tube due to external adhesions.

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Pathology—The ovum may become attached and grow in any part of the tube, and such pregnancies are classified as, (1) ampullary; (2) isthmal; (3) interstitial; (4) infundibular; according to the site.

The ampullary is the most common, and the isthmal is the next in frequency. An interstitial pregnancy being located in the uterine wall expands the cornu during its growth. The ovum grows in the mucous membrane in normal uterine pregnancy, and it is possible that the earliest stages of some tubal pregnancies are passed in the mucous lining of the tube. In a very short while, however, the growing sac burrows into the muscularis, and in the cases in which the ovum has passed into a diverticulum, the blastocyte cavity is fixed in the muscular wall from the very first. If seen at an early stage the involved part of the tube is found to be distended by a localized, fusiform swelling, whose surface is much congested and purple. When sectioned and examined by the microscope, the rounded blastocyst is seen, having many young villi sprouting from its surface, and situated in the blood lake which envelops the whole. The implantation chamber is formed by the expanded adjacent wall of the tube and all around it the muscle becomes degenerated and necrotic and torn up by spreading areas of edema and hemorrhage. This hemorrhage escapes from the vessels whose walls are gaping and often broken up by chemical material which comes from the chorionic cells. In early cases one may still see the lumen of the tube, and displaced in an eccentric manner.

In the tubal wall the intimate microscopic changes are hemorrhage and degeneration passing into necrosis in that part of the tube immediately surrounding the ovum. We never see in the tube development of a decidua enclosing and supporting the embedding chamber, such as is the normal occurrence in the uterus. The connective tissue cells in the muscular wall may expand in a decidua-like manner here and there, and the folds of mucous membrane may become turgid with a true decidua throughout the remaining part of the tube. But these deciduae are of no value to the growing ovum. This decidual reaction is not limited to the tube, for, as the tubal ovum grows, the uterine mucosa becomes thickened to form a decidua that is not distinguishable from that of a normal, healthy pregnancy. Often in addition to the above changes there may be evi-

dences of salpingitis in adjacent parts of the tube, such as inflammatory thickening of the muscular coat, or fusion of the folds or diverticula of mucosa. The final outcome of tubal gestation depends on a series of circumstances. The hemorrhage produced in some cases by the growing ovum at an early stage swamps and strangles the ovum where it has attached itself in the muscular wall. The blood clot that contains the fragmented remains of the ovum may be so completely absorbed as to leave little permanent evidence of pregnancy behind.

Rupture of the tube, however, takes place in some cases. Necrosis and hemorrhage is the cause of the breach in the tube, though it may be finally determined by a sudden exertion.

Internal Rupture of Tubal Abortion—The rupture occurs here in the lumen of the tube, into which the gestation sac in whole or in part may be forced. There is produced an haemato-salpinx, which may sooner or later be absorbed. However, in most cases there is a leakage of blood along the tube into the peritoneal cavity, and if this leakage is excessive, it may result in dangerous or fatal internal hemorrhage. The leak may be merely a gradual trickle, that clots around the tubal fimbriae, or in Douglas's cul-de-sac and form an haematocele. By gradual accretions of new clot this may increase in size until a large swelling is formed, which may fill up the pouch of Douglas. It may even rise up into the utero-vesical pouch, and in some cases be excessive enough to form a mass that can be felt in the abdomen. As a general result such blood accumulations become closed in by adhesions, and the same mass that is formed may contain the ovaries, uterus and other viscera.

After bursting out into the tubal lumen, not infrequently, the sac of the ovum is forced along the tube, until it is finally extruded into the peritoneal cavity, in which locality it may be found lying amongst the blood clot. The ovum is found, in some instances, in the process of being extruded through the dilated fimbriated opening. When an interstitial pregnancy ruptures into the lumen, the ovum sac may escape into the uterus, and it may be mistaken for an ordinary uterine abortion when it is found in or discharged from the vagina.

External Rupture—In this condition the tube gives way on its outer aspect. This breach occurs in one or the other of two

sites: (1) in the fixed broad ligament aspect; (2) on the free peritoneal surface. The locus of the rupture is determined by the situation of the gestation sac in the wall of the tube and the site of greatest thinning. The rupture may be slow or sudden, in either of the above two sites, and the manner in which the breach occurred will determine the clinical course and subsequent fate of the ovum.

Sudden Rupture on Surface of Peritoneum—Here an open wound is produced in the wall of the tube, and the large arterial and venous twigs in the vicinity of the fetal sac are lacerated. There results a severe and persistent hemorrhage into the abdomen, and this is arrested only by removal of the tube by operation or by the collapse or death of the patient. The ovum is still in a very early stage of development in most cases and the local disaster terminating in rupture results in immediate death. The ovum may be swept into the peritoneal cavity by the gush of blood loosening it from its roots.

On the Broad Ligament Surface—Similar results are produced when sudden rupture on the broad ligament occurs, i.e. hemorrhage into the broad ligament and death of the ovum. The broad ligament acts as a restraining force, however, and the hemorrhage into it is not nearly so excessive or dangerous as is characteristic of an intraperitoneal rupture. A gradual absorption of the haematoma may occur or subsequent infection from the bowel may cause serious trouble. Sudden rupture of the tube walls is naturally likely, only if the tube remains free and non-adherent over the area that is occupied by the growing sac.

Gradual Rupture; on Peritoneal Aspect—The tube has very limited power to expand and the tube is unable to cope with the developing ovum after a few weeks' growth. Also the aberrant pregnancy works such a degenerative change in the structure of the tube that its expansive power is still more weakened. But within a few weeks of growth the walls of the tube are enclosed and strengthened by surrounding adhesions, and hence sudden breach is prevented. In these conditions we observe that the giving way is more gradual; the pressure, etc., of the enlarging sac weakens and rather dissolves the tube, and, if the adhesions are sufficiently strong, they become incorporated in the new confines of the sac. Hence, it occurs that, where the gestation progresses to

any length, the envelope of the fetus is formed by neighboring organs and by new adhesions and these new adhesions nourish the placental tissues and the fetus. The viscera to form part of this new boundary may be the uterus, rectum, mesentery, small and large bowel, and liver, which become adherent one after another as the size of the sac increases. Under such conditions as this, a fetus starting its growth in the minute sac of the tube, may continue to develop to the fifth, sixth or even to a later month. Even full term may be obtained in rare cases. Recently it has been shown in the literature that one hundred cases have gone on to full term. In some of these cases there may be a healthy fetus, which may survive after delivery by operation. In the great majority of these cases, however, the irregular constriction of the sac and the amniotic adhesions cause fetal deformities.

These together with the imperfect nourishment furnished the fetus threaten the child's life. The child is born alive in only about 20 per cent of these cases that go to term. About half of these are mal-developed and a large percentage of them die. In most cases the life of the fetus is terminated by some unfavorable incident, as injury due to a strain or infection or hemorrhage into the sac. After the death of the fetus the sac begins to shrink, and the symptoms subside and may wholly disappear. We read that cases have occurred in which the sac has lain for years without producing any injurious effects. All that may be left is an indolent sac that contains the dry bones or the calcified remains of the fetus.

Gradual rupture into broad ligament aspect—A fetus development between the layers of the broad ligament may break through here and meet a fate similar to one growing in an intraperitoneal sac. If the ovum lives the sac may proceed to develop retroperitoneally, and in this way may lift the peritoneum widely from the wall and rectum and may even extend up between the mesenteries of the large bowel.

It is not uncommon for infection to be associated with tubal pregnancy. Infection from the bowel may extend to a haematocele or a haematoma, causing in the one case an adhesive peritonitis and in the other case a cellulitis of the broad ligament. Or the adherent bowel may infect the fetal sac. In any of the above conditions an abscess may form and the abscess

may rupture into the bowel, the vagina, the bladder or through the wall of the abdomen. In this connection there sometimes occurs an interesting condition where the abscess cavity of a tubal pregnancy ruptures into the rectum, or bladder or some other site and one after the other the fetal bones are passed through the anus or bladder, etc.

Uterine changes in tubal pregnancy.—Characteristic changes occur in the uterus during tubal pregnancy. The body grows until it may attain the size of a two-months' gestation and there is softening of the cervix. The mucosa of the uterine body is transformed into a decidua that is not to be distinguished from the decidua of a normal pregnancy, though to be sure, it contains no part of the fetal elements.

Symptoms.—In the beginning it may be impossible to distinguish tubal pregnancy from ordinary pregnancy, amenorrhoea, morning sickness, enlargement and tenderness of the breasts, abdominal enlargement, etc. While the fetus continues to develop without incident, no symptoms may be manifest to indicate the aberrant pregnancy, except, perhaps, excess in the morning sickness, and suspicious recurring pains in the abdomen produced by the stretching and burrowing of the sac while it is making its new boundaries. Sometimes the fetus may reach full term and not arouse any suspicion of its aberrant location until the beginning of spurious and futile labor pains particularly arouses the attention of the attending physician. Usually damage to the fetal sac arouses symptoms of an exaggerated kind. The time of most of these symptoms varies in different individuals and often follows some sudden exertion or strain as a fall or dancing. This may happen in the early weeks, and even before the ovum sac is four weeks old, in which case there will be no history of amenorrhoea. But usually this occurs later, about the second or third month. However, it may be still later than this.

The first symptom in the majority of cases is a stabbing pain in the lower abdomen, situated to one side or the other. This peculiar pain may come and go, recurring with added intensity, and there is nausea and vomiting when the pain is severe. After it has existed for some time, the pain may grow less annoying or even disappear altogether, when the tubal disaster was great enough to produce the death of the fetus, but not enough to in-

duce more injurious effects in the mother. The trouble may be brought to an end by the absorption of the clot in the tube, peritoneal cavity or the broad ligament, and the shrinkage of the sac. Or instead of the pains being recurring, in case of sudden intraperitoneal rupture the pain may be heralded in with dramatic suddenness, causing the patient to bend double in her great agony. Here the rapid pulse, the collapse and sudden anemia, and all the signs of an acute abdominal crisis, generally render the exact cause of the very serious condition of the patient most evident. The patient may die from internal hemorrhage unless she is operated on immediately.

The other main symptom is hemorrhage from the vagina. Separation of the uterine decidua that follows trauma to the fetal sac or death of the fetus is the cause of this hemorrhage. The bleeding varies in amount. Just a mere "show" may be present. It is never very much in amount. There may be contained in this hemorrhage the discharge of a cast formed by the cast off decidua. This cast, if complete, when floated out in water, is triangular in shape, corresponding to the uterine cavity. Examined by the microscope this decidua is like that found in the uterine pregnancy, but, of course, there will be no fetal parts in it. There may be present other less constant symptoms. Peritonitic symptoms will be caused by infection of an haematocele, and a haematoma will induce symptoms of acute parametritis. It should be borne in mind that the slow leakage of blood into the peritoneum may be associated with an irregular temperature chart which suggests an infective process.

Signs.—The signs of a tubal pregnancy may simulate those of a normal pregnancy insofar as the abdomen, the breasts, and even the increase in the size of the uterus, are concerned. An always important sign is tenderness and rigidity in the abdomen low down and to one or the other side. This may be present, however, only after the rupture of the tube. When the intraperitoneal rupture is sudden the abdominal signs are diffused, accompanied by extreme pallor of the face. The abdominal tenderness is acute in such cases, and, even when it is diffuse, it is almost always more pronounced low down in the affected side. The same conditions apply to the rigidity. However, it must be borne in mind that the signs of abdominal crisis, may contin-

ue to be diffuse throughout, because blood, when widely scattered in the cavity of the peritoneum, is apt to cause acute tenderness and boarding over a wide area very like to acute peritonitis. The local increase in size of the affected tube may be palpated bimanually at an early stage lying to the side of or behind the uterus. In case of an haematocele the firm, rounded mass can be felt filling up the cul-de-sac of Douglas, and it may even rise above the pelvic brim, in which case it is found to be in the lower abdomen. When tubal pregnancy progresses to later months of pregnancy we have an accompanying, gradually increasing tumor of the abdomen, and the presence of such signs as ballottement, fetal movements, and the fetal heart may duplicate a uterine pregnancy.

However, the enlargement or tumor mass throughout is, as a rule, asymmetrical.

Differential Diagnosis—Tubal pregnancy in the early stages is usually mistaken for an ordinary pregnancy. Later the abnormal site is recognized by oft repeated and stabbing pains low down in the abdomen to the one side or the other, and by the enlarged tube by the side of or behind the uterus felt bimanually. Again in later stages of an extra uterine pregnancy growing in the abdomen, the occurrence of recurring abdominal pain and vaginal bleeding both of which may persist to the end, should convince one of an abnormal pregnancy. Two helps in diagnosis are the asymmetrical position of the abdominal swelling and the recognition, by bimanual palpation of the small uterus which is separate from the pregnancy.

In a woman who is known or suspected to have been pregnant, the pain or the bleeding which accompany tubal death or damage, are apt to give one the idea of abortion. The pain of tubal cases also is different from the pain of ordinary abortion, which has its beginning in front but is soon experienced in the small of the back, and is rhythmic in character. We know also that in tubal pregnancy the vaginal bleeding is slight as contrasted with the bleeding of abortion. Again the fetal sac of an early abortion may be suggested in the escape of the decidual cast of the uterus in a case of tubal pregnancy. A real uterine gestation will be made clear by the finding, microscopically, of the fetal villi when the case is doubtful. However, it must be borne in mind that villi are

sometimes difficult to find, and the fact that we cannot find them is not sufficient evidence on which to base a diagnosis of tubal pregnancy.

A tubal gestation may be simulated by the enlarged uterine body lying in Douglas' cul-de-sac in the case of a gravid retroversion. The symptoms of pregnancy are present in both and abdominal pain is common in both. By the third month we see that retention of urine with distension of the bladder is quite frequent in a retroverted uterus, moreover, we can usually recognize and correct, bimanually and under an anaesthetic if necessary, a retroverted pregnant uterus in the early months. In the days before it was recognized that tubal pregnancy was possible, such cases were often mistaken for a gravid retroversion, and attempts made at reposition naturally terminated in rupture and disaster.

A source of confusion may at times be observed in a pyosalpinx. One will often elicit the history of a preceding infection in cases of tubal pregnancy, and because of this fact the tender tubal swelling may easily be taken for a pus sac. Usually there are distinguishing features such as, normal pregnancy, the symptoms and signs of pregnancy, and in tubal pregnancy a more definitely bilateral involvement of the tubes, together with signs of elevation of the temperature. Sometimes, however, it is very difficult to make a diagnosis and it can only be determined by laparotomy. A tubal sac may suggest a fibroid or an ovarian tumor, but such a diagnosis may be made clear by the history and physical signs.

Treatment—Laparotomy and removal of the tube should be performed as soon as a diagnosis of active tubal pregnancy is made. This must be done immediately in a case of intraperitoneal rupture to save the patient's life from bleeding. In less urgent cases the less delay there is in operating the more likely will you forestall rupture. The greatest of care must be had in moving the patient to the hospital.

The operation is not at all complicated. The abdomen is opened through a longitudinal mesial incision. If rupture has already occurred the blood clots should be rapidly cleared out so as to allow the recognition of the tube. The tube should be clamped on the uterine side of the sac, and the infundibulo-pelvic ligament containing the ovarian vessels is also clamped off, and then the tube is excised. Before

the tube can be freed sufficiently to allow of its being removed, it is often needful to separate recent adhesions which are observed to surround the tubal sac and the poured out blood. When it is quite evident that the pregnancy in the tube is dead, or that there is a localized extravasation in the broad ligament or into the cul-de-sac of Douglas is all that remains, the best treatment is expectant. All the conditions settle down, there is a gradual absorption of the clot, and, although the case has advanced beyond the earliest stages, there is a complete subsidence of the symptoms. If through any suspicion at any time of infection in the shape of pain or fever, or any suspicion later, that, after all, the fetus is yet alive, operation should be done without delay.

Abscess formation quickly follows the infection of a mass of blood-clot. This abscess may rupture into the rectum and subside with gratifying results. In other cases the abscess bulges into the vault of the vagina, or it may reach as far as to the surface of the abdomen. Whichever may be the case it must be treated by incision and the introduction of a blunt pair of forceps or blunt scissors to search out and liberate the enclosed pus. An extra-uterine pregnancy at or near full-term must be dealt with by immediate operation. By doing so you may hope to save the child, and by this action early the risk of infection and adhesions is greatly reduced. By careful dissection in some cases we may succeed in removing the whole sac. In other cases the adhesions are so persistent as to prevent its removal in whole or in part, and after we have brought it to the surface, we have found that it is well to stitch the opening to the abdominal wall and to pack the cavity with gauze, in the hope that shrinkage will eventually obliterate it. This procedure is called marsupialization of the sac. If the placenta is found to be adherent it should be allowed to dissect itself free at leisure after thrombosis of the retroplacental vessels has occurred. By this procedure the risk of severe immediate hemorrhage is overcome.

GROWTH OF CHILDREN THAT ARE BELOW AVERAGE WEIGHT

A group of 1,491 children, native born Americans, living in a rural community in Tennessee was studied by F. L. Roberts, Trenton, Tenn. (Journal A. M. A., Sept. 10, 1927), with reference to gain and loss of weight as judged by the Bald-

win-Wood tables. No nutrition work was carried on among these children, although during the time a general country-wide health program was being carried on. The children were grouped into three classes, those equal to, above or less than 7 per cent below the average constituting group 1. Group 2 was composed of those from 7 to 12 per cent below the average weight, and group 3 of those more than 12 per cent below the average. The conclusion with reference to the particular group of children studied may be briefly stated thus: 1. Children that are above or equal to the average weight tend to remain in that group, and those that are below the average tend to remain below the average. The greater the percentage below the average weight, the greater is the tendency to remain below average. 2. Girls are more prone to drop from higher into lower groups and tend to remain in lower groups more than do boys. 3. Children that are below average weight gain as many pounds per inch in height as do children of average weight. The weight curve is as regular in those children below average weight as it is in children of average weight. 4. Girls tend to lose weight more than do boys. 5. Girls that are below average weight do not gain as regularly as do boys.

IODERMA FROM IODIZED OIL

George H. Belotz, Ann Arbor, Mich. (Journal A. M. A., Sept. 10, 1927), reports the case of a man who developed an acneform eruption involving the face, upper trunk and arms, such as is commonly caused by iodide or bromide. Bromide and iodine were searched for in the patient's urine. No bromide was found, but iodine was present in large quantities. No iodide was given the patient, and iodized salt was not being used. Close questioning of the patient failed to obtain a history of taking medicine not given him by the physician in charge. Thorough investigation of the patient's record since his admission, Dec. 22, 1926, reveals three possible sources of iodine. Dec. 29, 1926, he received gallbladder dye (tetraiodophenylthalein) by mouth; from Jan. 11 to Jan. 16, 1927, he received potassium iodide, 15 grains (1 Gm.) three times a day, and on March 29 his lungs were injected with lipiodol. The eruption for which the patient was referred appeared, April 6 or 7. Examination of the urine and saliva, April 13, 14 and 15, were strongly positive for iodine, and reexamination of the chest by roentgen ray, April 14, showed the presence of lipiodol in the lung bases.

ROENTGEN-RAY OBSERVATIONS IN ASTHMA

Willis F. Manges and S. J. Hawley, Philadelphia (Journal A. M. A., Sept. 10, 1927), believe that a diagnosis of asthma is not complete without a roentgen-ray examination of the chest and sinuses and a very careful surgical search for other foci of infection about the upper air passages and mouth. It is certain that infection plays an important role in the majority of cases of bronchial asthma. Of the cases examined by them, general peribronchial thickening was found in forty-two cases; chronic lower lobe infection in thirty-six cases; tuberculosis in twenty-eight; thickened root structures in nineteen; enlarged heart in five and emphysema in two cases.

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DR. CLAUDE A. THOMPSON.....Editor-in-Chief
Barnes Building, Muskogee, Okla.

DR. P. P. NESBITT.....Associate Editor
Palace Building, Tulsa, Okla.

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Local news of possible interest to the medical profession, notes on removals, changes in address, births, deaths and weddings will be gratefully received.

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EDITORIAL

CLOSING TIME

This issue of the JOURNAL ends the work for 1927 and we have before us the new arrival—1928. It gives us pleasure to announce that the past year has been fairly satisfactory from many standpoints. We hope, and know we will have more material and general prosperity and improvement from every standpoint during 1928. Oklahoma is blessed, in the main, with a very sensible medical profession, and it is constantly improving its

mental and technical equipment. As a rule its members are unusually well abreast of the times, medically and surgically speaking, and we have a large and increasing number devoting their intelligence and peculiar fitnesses to the specialties. Hospital facilities are growing generally and they are being maintained up to most modern standards. The writer would not pretend to suggest room for improvement except common sense dictates that work and application will improve anything not already perfect, and in these rapidly changing times there seems to be no perfection in anything. Each day brings new announcement of something new and improved over the old order. One of the things which every man should do, however, should be to sit down and take careful stock of his work for the past year. As a matter of efficiency from the business standpoint, old matter should be brought to its best state and a new slate started. The losses and failures of the year should be remembered but the losses should be regarded philosophically and not be permitted to unnecessarily harden one's heart against the needy in their time of distress. It should be remembered that probably no man ever lost in the final analysis over the distribution of too much charity, and the physician should temper the winds of adversity for the unfortunate among us. However, much unnecessary loss is sustained by the profession en masse over the mistreatment of those able to pay but who will not. A certain class have grown up to regard physicians' services in a vague manner as something to be looked after in the way of remuneration in the vague, uncertain, nebulous future. These should be brought up sharply and asked to pay that bill and postpone, for the time, purchase of the new Ford creation. It is just a little irritating to see some one who has long owed the doctor on the plea of inability to pay, moving serenely and grandiloquently along in the swim in a much better car than the doctor himself would think of purchasing.

The JOURNAL takes this occasion to thank the many friends who have eased the way during the past. Their cooperation has been splendid and helpful.

A most prosperous New Year for everyone is the sincere wish of the writer.

DR. HUGH SCOTT AGAIN LOST TO OKLAHOMA

Necessity of the federal service has caused the transfer of Dr. Hugh Scott from Muskogee Veteran's Hospital to Edward Hines Jr. Hospital, Chicago, the latter the largest hospital maintained by the Veteran's Bureau. While the change is a distinct promotion for Dr. Scott, it produced the greatest regret on his part and the part of hundreds of friends, lay and professional, that the State should lose his amiable and helpful personality. Scores of men who have had his sympathetic aid and help in many ways sincerely regret to have him move from among them to other work. However, Dr. Scott is and always has been ready to answer the call of duty regardless of his personal desires and wishes, so we find him taking up his work in new fields. This is the second occasion within a decade where he has been called to other fields. Shortly after the war when organization of the Veteran's Bureau, then undertaken by the Public Health Service, was in contemplation, and the problems were legion, he was called to Washington where he rendered efficient service in the central office, later when the work was superseded by the Veteran's Bureau, he was found among the leaders in the work, for a time in the capacity of acting medical director of the Bureau. At this juncture Oklahoma built the Veteran's Hospital at Muskogee and by his personal wish he was transferred to that institution.

Arriving before the buildings were nearly completed it was his task to execute every order for the thousand and one supplies necessary for inauguration of the work. He did this and more. By his personal acquaintance he was enabled to secure for the hospital many of the extraneous but helpful accessories which go to make the stay of the patient as pleasant as possible. Probably it is not exaggeration to say that such voluntary outside aids and contributions will total many thousands of dollars. Oklahomans who know Dr. Scott will await with pleasure the day when we hope to have him one of us again.

OKLAHOMA SUSTAINS ANOTHER LOSS IN MOVE OF DR. SHEPARD

As announced a few months ago, Dr. R. M. Shepard, Talihina, superintendent

of the State Tuberculosis Hospital, will go to Patterson, N. J., in January to assume duty as superintendent of a large State institution. While in Talihina, Dr. Shepard made a record of which any man may be proud. He performed unusual duties under perplexing handicaps and especially did he do good work, though short of supplies, professional aid and personnel to accomplish all he desired. His removal is really a reflection upon the past legislatures of Oklahoma, who by their mistaken ideas of duty and economy in withholding necessary appropriations, discourage those who give their life work to the prevention and control of tuberculosis, eventually turning them to fields more modern in their handling of identical situations and more liberal with appropriations necessary to a proper approach and care of one of the most difficult problems confronting the people. There is little or no excuse for this attitude. Probably the general apathy of the medical profession and consequent failure of the physician to adequately advise his friends in the legislature is more responsible for the situation than any other reason. Certainly the State is able to do more than it has done heretofore for the control of tuberculosis. In the meantime we must stand by and see many able men leave us. Former Oklahomans are now pretty well scattered over the United States in Public Health and allied work when they could be more congenially and pleasantly situated at home where they are as badly needed, if we had the proper attitude on such matters.

Editorial Notes — Personal and General

DR. A. L. STOCKS and family, Muskogee, spent some time in December visiting New Orleans.

MORNINGSIDE HOSPITAL, Tulsa, tentatively announce January 16th as the date of the opening of the New Morningside Hospital:

DIPHtheria showed a wide increase over the State generally during November and early December according to reports of various health officers.

DR. W. G. HUSBAND, Hollis, has started work upon a new hospital. The structure will contain 24 private rooms, as well as all necessary utility and service rooms.

DR. FOWLER BORDER, Mayor of Mangum, is a believer in the "City Beautiful." He offers a first prize of \$100.00 for the best rose garden. Mr. C. M. Stone offers the second prize of \$50.00.

DR. and MRS. C. F. PARAMORE, Shawnee, announce the birth of a daughter, Alice Louise, December, 10, 1927. Dr. Paramore, formerly of Durant, is connected with the Shawnee Clinic.

GUTHRIE'S METHODIST Hospital Board plan a campaign to raise \$60,000.00 to complete the hospital in Guthrie. Drs. John E. Heatley, W. K. West and W. J. Wallace, Oklahoma City, were elected to the staff.

DR. J. G. SMITH, Bartlesville, and Miss Helen Wark, formerly Superintendent of Bartlesville Hospital, were married in Dallas November 24th. After visiting Texas points they returned to Bartlesville where they will make their future home.

DR. IRA W. ROBERTSON, Henryetta, was tendered a banquet November 29 upon the eve of his departure for Wewoka, where he will take up his new location. Forty friends and neighbors attended. The occasion was presided over by Dr. W. D. Dawson, Henryetta.

STEPHENS COUNTY Medical Society were guests of Dr. J. L. Patterson, Duncan, November 29th. After dinner papers were read by Drs. C. P. Bondurant, Oklahoma City, on "Some Common Diseases of the Skin" and Dr. E. Margo, Oklahoma City, on "Infantile Paralysis."

ST. ANTHONY'S HOSPITAL, Oklahoma City, has been formally opened to the public. The structure consists of five stories, costing \$150,000, provides sixty rooms for patients, diet kitchens, utility rooms, interns' rooms, physicians' assembly and clinic rooms. It is thoroughly modern.

LINCOLN COUNTY Medical Society, November 9th were guests of Prague physicians and dentists. Papers: Dr. C. J. Fishman, Oklahoma City, "Diseases of the Stomach;" Dr. J. E. Hughes, Shawnee, "Cancer;" Dr. J. M. Hancock, Chandler, "Military Surgery." Dr. W. H. Davis, Chandler, president, presided and Dr. F. H. Norwood, Prague, was toastmaster. A large number of out-of-town physicians attended.

MUSKOGEE COUNTY Society, meeting December 12th, heard a paper by Dr. Fred G. Dorwart, Muskogee, on "Essential Hypertension." Officers elected for 1928 were: President, Dr. I. B. Oldham, Sr.; vice-president, Dr. R. N. Holcombe; secretary-treasurer, Dr. A. L. Stocks; censors, Drs. G. W. Stewart, Chas. E. White and Chas. P. Murphy, Muskogee. The first meeting in January will be a social affair to which physicians' wives will be invited to participate in the annual dinner. The society voted to arrange for a public meeting at which Dr. F. E. Warterfield will deliver an address on the economic and menacing phases of venereal diseases.

DR. PAUL CHAMPLIN, Enid, county physician, speaking before Enid Rotarians recently, denounced Garfield County Poor Farm as "a disgrace to a community." He explained that he was not criticising the management, but the facilities. No doubt a similar and well placed charge could be properly laid at the doors of

most of county officers throughout the state. Incidentally Dr. Champlin touched upon a probable near shortage of physicians, which he attributes to the high cost and length of time of a medical education. His opinion is that in a few years rural communities will feel this shortage most acutely and suffer as a consequence.

OTTAWA COUNTY Society held its fourth annual, celebrated Game Dinner Friday evening, Dec. 16th, at the Country Club, Miami. The program, like that of a year ago, was an inspiration. The menu called for everything from "Burgoo" to cigarettes. The scientific program was handled by Dr. W. W. Jackson of Hot Springs, Ark., who spoke on "Spinal Anaesthesia." Dr. Fowler Border of Mangum, Okla., took for his subject, "Looking Backward (Retrospective Medicine)," while Dr. C. R. Lowdermilk of Galena, Kans., handled "Looking Forward (Prospective Medicine)." "My Observations of Dogs and Doctors" was given by Dr. John L. Smiley of Siloam Springs, Ark.

DOCTOR CHARLES MILTON MORGAN

Dr. C. M. Morgan, practicing at Chandler since 1908, died November 6th at Tucson, Ariz., after a long illness. Funeral services were conducted at Chandler under auspices of Presbyterian Church, interment at Oak Park Cemetery in charge of the Masonic brotherhood. Born in Columbus, Ohio. February 4, 1873, Dr. Morgan moved, in his childhood, to Keats, Kans., where he resided until 1906, receiving his literary and medical education, he moved to Davenport for two years, then to Chandler where he has since resided. He was married to Miss Harriet McLaury, of Cushing in 1913, to which union three children were born. He is survived by his widow, a son and daughter. Dr. Morgan has been a member of Lincoln County Society since his location in Oklahoma, and for many years was secretary of that society.

Fitting resolutions were adopted by a committee from the Chamber of Commerce the committee being composed of lay and professional friends of the deceased.

REPEATED ACIDOSIS AND COMA IN JUVENILE DIABETES

That proper medical direction and the constant and intelligent obedience to instructions are in any event indispensable for the successful management of patients with juvenile diabetes is well shown by the case reported by Thomas A. Clawson, Jr., and George A. Harrop, Jr., Baltimore (Journal A. M. A., July 2, 1927), which records twelve successive periods of severe acidosis or coma in a colored child, age 11, following dietary indiscretions, and in one instance, of infection. Death finally resulted outside the hospital, evidently in coma, because the family did not apply for medical aid.

UROLOGY and SYPHILOLOGY

Edited by Rex Bolend, B.S., M.D.
1010 Medical Arts Building, Oklahoma City.

Involvement of the adnexa in gonorrhea is always ushered in by rise of temperature.

If, in hematuria, the patient passes a worm-like clot, the hemorrhage is undoubtedly of renal origin.

The bullous syphilide in hereditary syphilis always is indicative of a very severe form of the infection. It is often fatal.

Beware of curious-looking eruptions upon the face of a young woman, unlike anything you have ever seen before. It is probably self-inflicted.

Eruptions about the coccyx and anus are frequently eczematous, but the possibility of their veiled syphilitic origin should never be overlooked.

If recurrence of a malignant renal growth does not take place within two years after removal of the tumor, it is quite likely that the patient will have none.

Handle anemic syphilitics with the utmost care, and remember that their chance for cure is in exact ratio to the strength of their vital forces. Build them up.

Laboratory means are still called upon too often to do the work for lazy or ignorant minds. Physio-therapeutics seem to be starting on the same road.

In removing papillomata of the bladder suprapubically, be very careful to guard the wound from small particles dropping into it. They will give rise to secondary growths.

Be acquainted with the value of all modern tests for renal function, but do not rely fully upon one. Don't forget that in some nephritic disorders, the employment of iodide of potassium and lactose is not unattended by danger.

Before attempting to pass an instrument of whatsoever sort through an old and tight stricture in an urethra with which you are not familiar, make an examination preferably with an aero-urethroscope. In this way you can determine the approximate caliber of the urethra, presence of false passages.

The beneficial effects of heat in gonorrhea are not due to the sterilizing action of the heat, since the heat never reaches the gonococci beneath the surface of the tissues, and even those on the surface are protected by the fluids surrounding them. The heat probably acts merely as a stimulus to the natural immunizing power of the cells by accelerating the blood circulation.

It seems to be established that forage, cannulization, nuching of the prostate as it is variously called, is a useful operation for urinary obstruction due to hypertrophy of the prostate, particularly in complete retention in small and medium-sized enlargements. Whether it ever

effects a permanent relief in these cases as claimed by Luys is still a matter of controversy. Recurrence appears to be frequent.

"IMMUNITY IN SYPHILIS"

"The study of acquired immunity in syphilis has occupied the attention of investigators during the past few years. The fact that reinfection in syphilis is rare suggests the possibility that the original infection imparts some degree of immunity, rather than that the rarity of reinfection was due to the presence of the original infection because of an incomplete cure, and that those who developed infection a second time were those who were completely cured. I was shown, however, that in rabbits the time at which treatment was begun was a determining factor. If treatment was begun in less than six weeks after the onset of the disease, reinfection was possible; if begun between six and twelve weeks the results were variable and if after twelve weeks, reinfection was practically impossible. But it was shown later by Chesney and Kemp (Journal of Experimental Medicine) that lymph nodes of treated rabbits were incapable of transmitting the disease to normal rabbits, irrespective of the time at which treatment was begun, which indicated that the animals were probably cured to the same degree whether treatment was begun six weeks or twelve weeks after infection. Yet the animals treated early could be reinfected readily, while the animals treated late could not be reinfected."

"LEUKEMOID BLOOD PICTURE IN SYPHILIS"

"In the Boston Medical and Surgical Journal, Larrabee and Sidel report a case of syphilis with a leukemoid blood picture. On admission the case was considered as a probable myelogenous leukemia, but the roentgen-ray and Wassermann reports led to the correct diagnosis. Intensive antisiphilitic therapy was instituted and recovery followed. The report goes to show that not always is a leukemoid blood picture proof positive to true leukemia."

"THE OBSTRUCTING PROSTATE"

H. Q. Gallupe (Boston Medical and Surgical Journal) in discussing the question of the obstructing prostate, voices the view that many patients who are suffering from symptoms created by the obstructing prostate are carried along by the aid of urinary antiseptics and catheters until they become poor operative risks. This method is usually followed because it is believed that a painful, dangerous and time-consuming operation can be avoided, or that the patient is in such poor condition that operation seems to offer little hope for recovery. But the author states that he has yet to see a patient suffering from prostatic obstruction who showed any reasonable contra-indication to proper bladder drainage. The patient who seems closest to death may return to a level which would make him a fair operative risk once bladder drainage has been established.

If one could choose his case for operation, first choice would be the man of 55, with normal blood pressure for that age, heart and kidneys in good shape and with no marked infection of the urinary tract. He should have a small residual urine and a kidney function of not less than 40

per cent. His symptoms should be frequency and a weakened stream. The patient would have the same chance for recovery as one of that age following appendectomy.

The second choice would be the man who has been urinating about six times a night and has had to refrain from daylight activities because of urgency and dribbling. He has had catheters passed and has considerable pus in a large residual urine. His renal function indicates that his kidneys are damaged and has come to the hospital for the relief of acute retention. The patient's prostate is not large, but firm and fibrous. The man's chances are not so good and the care of him pre-operatively and post-operatively is much more difficult.

The last choice is no choice at all, but rather the patient who is forced upon you at the end of his rope. He has all the symptoms of the second patient plus disease of other parts which lowers his chances. There is a variety of opinion about the pre-operative and post-operative care of these patients, but it is evident that the bladder must be drained first (whether by catheter or by supra-pubic incision must be determined in the individual case) and allowed to drain until the patient returns to a condition which approximates normal. Large amounts of fluid must be given. The choice of the anaesthetic depends upon the blood pressure, the condition of the myocardium and the kidney function. The first stage can always be done under novocaine and the removal of the gland can be done under spinal, sacral, gas-oxygen or gas-ether.

The type of patient has more to do with the mortality than the operation itself and the general condition of the patient and the complications arising during the treatment influence the outcome most.

ORTHOPAEDIC SURGERY

Edited by Earl D. McBride, M. D.
717 North Robinson St., Oklahoma City

RUGH, J. T.: COMPLICATIONS OF SURGICAL TUBERCULOSIS, ESPECIALLY OF THE SPINAL TYPE. *Atlantic M.J.*, 1927, XXX 563.

Hugh reviews the treatment of surgical tuberculosis in which complications have developed after treatment in general practice and in institutions for periods ranging from one to twelve years. He believes that in cases of cold abscess interference is indicated only when the abscess is increasing rapidly in size, when it is pointing and threatening to break and when it is interfering with the general health. The only treatment of such abscesses is aspiration. They should not be incised, drained, or washed out.

The material in tuberculous abscesses is infected only by the tubercle bacillus. These bacilli are seldom found in the pus, but when the pus is injected into guinea pigs it produces typical tuberculosis and no other infection. In cases of open sinus, however, mixed infection cannot be prevented.

All that is necessary in the treatment of a cold abscess is relief of the tension to prevent rupture. As soon as a tuberculous abscess is opened and drainage is begun, mixed infection is almost certain to occur.

Under proper treatment with rest, absolute fix-

ation, nourishing food, exposure to the sunlight, and the administration of fats, surgical tuberculosis is one of the most curable of conditions.

When treatment with rest and absolute fixation is given, paralysis developing in spinal cases practically always disappears after the first attack. Functional as well as physiological rest of the parts is essential. Some orthopedists claim that weight-bearing may be allowed because the weight is thrown on other parts, but Rugh states that he has seen many cases in which weight bearing after fixation was followed by abscess formation and the breaking down of tissue. Surgical fixation of bone graft or osteoplastic operation is of great value in these cases.

SCHUERER-WALDHEIM, F.: ACUTE RAPIDLY FATAL OSTEOMYELITIS. (Ueber akute, rasch zum Tod fuhrende Osteomyelitis) *Arch. f. klin. Chir.*, 1927, CXLIV, 65.

Osteomyelitis is to be regarded as a secondary disease. The portals of entry are furuncles, paronychia, or the mucosa of the gastro-intestinal tract. There are various forms of the condition; the ordinary purulent type, the sclerotic non-purulent type, non-purulent osteitis aluminosa, and the hemorrhagic, septic type which runs a rapidly fatal course. The author reports six cases of the last type in children between 2 and 14 years of age in which the condition was complicated by toxic exanthemata, purulent arthritis, thrombosis of large vessels, and numerous pulmonary metastases. All of the patients died within 72 hours.

Early diagnosis and early operation are the only life saving measures known. The operation must be performed with minimal concussion of the bone.

MAYER, L.: TRANSPLANTATION OF THE TRAPEZIUS FOR PARALYSIS OF THE ABDUCTORS OF THE ARM. *J. Bone and Joint Surg.*, 1927, IX, 412.

Many attempts have been made to correct paralysis of the shoulder. Hilderbrand shifted the clavicular portion of the pectoralis major over the acromion by twisting the muscle so that its deep surface became superficial. Lange attempted to replace the deltoid by threading the trapezius with numerous strands of silk and attaching them to the humerus at the deltoid insertion. Lewis sewed the trapezius to the paralyzed deltoid. Spitzzy combined the transplantation of the trapezius and the pectoralis major. Stoffel and Spitzzy attempted various types of nerve implantation for regeneration of the paralyzed circumflex nerve.

Despite these numerous attempts, only one operation for paralysis of the abductors has been accepted as a standard procedure—arthrodesis of the shoulder. This operation, however, gives only one-half the normal range of motion at the shoulder and a result which is far from aesthetic. The procedure described by Mayer in this article consists in detaching the trapezius, the serratus magnus, and either the pectoralis major or the coracobrachialis or the biceps must be active.

The bony attachment of the trapezius is outlined by the skin incision, the skin dissected up, and the muscle cut free from its insertion. A second incision two inches long is then made in the region of the insertion of the deltoid and the fibers of the deltoid are slit for exposure of the

bone. A bone flap one-half inch long and one-third inch wide is removed from the cortex of the humerus. Half an inch lower, a drill hole is made to facilitate the anchoring of the artificial tendon. A portion of the acromion just posterior to the acromion-clavicular juncture is removed to permit the passage of the forceps between the acromion and the shoulder joint, downward beneath the fibers of the deltoid and out at its insertion. A second pair of forceps is left in place to be used later in pulling down the facial tendon.

An assistant prepares from the fascia lata a graft 6 inches long and 3 inches wide with one end tapering. The inner surface of the fascia is roughened to make it adhere to the fibers of the trapezius muscle with interrupted sutures as far up as possible. A No. 3 chromic stitch is passed in a criss-cross direction three or four times through the tendon and brought down to the deltoid insertion. The arm is abducted to 150 degrees and the tendon firmly fastened to the bone. The retracted periosteal margins are then brought together to cover the tendon, the skin incisions are closed, and the arm is fixed in abduction by a plaster cast.

At the end of three weeks the arm is taken out of the cast and exercises are begun. During the exercises, the arm must not be brought lower than 90 degrees. After six weeks very gentle massage and manipulation are begun to improve the range of motion.

To date, six cases have been operated upon in the manner described. In one, the procedure was a complete failure because the tendon tore away from the humerus. In another, the result was poor, probably because the child was removed from the hospital too soon and the after-treatment was improperly carried out. In the four other cases, however, the results were gratifying.

The operation described gives a more complete range of abduction and a better aesthetic result than arthrodesis but has the disadvantage of requiring at least three months of postoperative exercise.

TUBERCULOSIS

Edited by L. J. Moorman, M.D.
912 Medical Arts Bldg., Oklahoma City

Specific Medication in Tuberculosis With Special Reference to Chemotherapy. Edward R Baldwin, M.D., *Journal of the Outdoor Life*, November, 1927.

The history of specific medication in tuberculosis divides itself into five natural periods: (1) the pre-bacillary era, before the discovery of the tubercle bacillus; (2) the anti-bacillary or germicidal period following the discovery of the bacillus; (3) the tuberculin period; (4) the sero-therapy period and (5) the chemotherapy period. The pre-bacillary period covers all time up to 1882 and contains many forms of treatment mostly symptomatic. Inhalations of various sorts, cough sedatives, the heavy metals, salts of lime, potassium and phosphorus, cod liver oil, purging and blood-letting, alcohol, and many drugs were all used in the treatment of tuberculosis. After the discovery of the tubercle bacillus by Koch a scientific search for a germicide was started which has been unsuccessful to date. All substances in strong enough solution to kill the ba-

cillus have proved too poisonous for human tissues. Koch's tuberculin, discovered in 1890 was at first considered a specific but has proven disappointing as it is dangerous unless used very carefully on those localized lesions which can be watched by the eye such as foci in the eye, skin or larynx, or in those pulmonary cases known to be well localized which fail to heal. Nothing superior to tuberculin to act specifically on tuberculous tissue has been contributed and the indications for rational therapy have become clearer during its use. All efforts to find an antitoxic serum for the treatment of tuberculosis have failed and so far, there is no scientific proof of the presence of antitoxic substances in the blood or tissues of tuberculous animals as all positive results can be explained by other means. Use of gland products and tissue extracts has also failed although it may be that the powers of defense against the tubercle bacillus lie in the body cells and further study along this line may be useful. Chemotherapeutic research is going on all the time with greater efforts since the discovery of salvarsan. Aniline dyes have failed owing to the difficulty in penetrating the waxy tubercle bacillus with any dye. Cresols, possibly the most active germicidal substance on this bacillus outside the body not only lose their potency in the body but are poisonous. Formalin injections proved very dangerous. Many attempts have been made to use salts of the various metals, especially gold, the most recent of which are those of Mollgaard in Denmark. Efforts to duplicate his experiments have had conflicting results and at present its use is greatly restricted. It has stimulated study, however, and contributed to the knowledge of this disease. It is probably undesirable and irrational to attempt to destroy those bacilli already imbedded in the tissues although some harmless substance might be placed in the blood stream to kill those bacilli which escape from time to time. It might be of advantage to combine some such substance with tuberculin. The best treatment continues to be to support Nature with rest and good hygiene.

Tuberculous Lung Changes. Frank S. Bissell, M.D., *The Journal of the American Medical Association*, September 17, 1927.

Periodic X-ray examinations are urged as a means of determining the progress and prognosis of tuberculous lesions, also of differentiating them from other conditions. Patients so observed and kept under proper home and vocational management may often be saved a long period of inactivity and sanatorium expense.

The Diagnosis of Tuberculosis in the Child's Chest. Kennon Dunham, M.D., *The Journal of the American Medical Association*, October, 22, 1927.

If a positive diagnosis can be made through bacilli in the sputum or by X-ray markings or physical signs similar to those in adult tuberculosis it is usually too late to save the child. It is not necessary to treat all children with a positive tuberculin test since many healthy children show this sign. The same is true of calcified hilum and bronchial lymph nodes while many children needing treatment show neither of these signs. All children with rapid pulse, low grade fever, underweight and poor nourishment should be considered "potentially tuberculous" whether there is a

history of exposure or not. They should be treated with bed rest in the open air, proper feeding, removed from all sources of infection and have all deformities corrected. Treatment should be continued until the child is free from fever and the weight is above normal.

The Diagnosis and Treatment of Bronchiectasis.
Carl A. Hedblom, M.D. *The Journal of the American Medical Association*, October 22, 1927.

Diagnosis of bronchiectasis by roengenography with iodized oils rather than by clinical observation alone enables the physician to make a much earlier diagnosis than is otherwise possible often making surgical treatment possible while the process is limited and the tissues elastic and before other vital organs have become injured. It also enables him to differentiate the various types of dilatation and study the distribution, thus aiding greatly in the selection of the treatment best suited to each case. Drainage is used in the treatment of single cavitations and localized gangrenous extension. Compression, either artificial pneumothorax, phrenico-exeresis, extra-pleural thoracoplasty and pneumolysis, are all used in various types of cases. Artificial pneumothorax or temporary paralysis of the phrenic nerve or both are indicated in early cases and in children. Phrenico-exeresis and extra-pleural thoracoplasty in several stages are of use in old cases. Marked improvement usually results and operative mortality is relatively low. If lobectomy or cautery extripation later proves necessary, either are much safer and more effective after a thoracoplasty and phrenico-exeresis. Primary lobectomy and cautery extripation are not recommended because of the high post-operative mortality and frequent residual bronchial fistula. Early accurate diagnosis and prompt surgical treatment results in many cures with much saving of tissue and function and a minimum risk.

Tuberculosis in Childhood: Prognosis, Prophylaxis and Treatment. John C. Gittings, M.D.; Frederick W. Lathrop, M.D.; and Samuel A. Anderson, M.D. *The Journal of the American Medical Association*, October 22, 1927.

Prognosis in pulmonary tuberculosis in children is bad in inverse proportion to the age of the patient when infected. All infants infected under three months die; four-fifths of those infected in the first nine months usually die but those who survive their second year show a relatively good prognosis. Some knowledge of prognosis can be gained by a series of tuberculin tests begun as soon as the infant has had contact with a tuberculous person. A massive dose of tubercle bacilli produces a short antiallergic period with acute, fatal disease while a small dose produces a long antiallergic period with a benign course of disease. Some idea of the activity of the lesion may be formed by repeated, uniform doses of tuberculin every 15 days—the lesion is progressing if the reaction becomes more marked. Patients with tuberculide of the skin show a high mortality while those with recurrent phlyctenules or cervical adenitis rarely develop pulmonary tuberculosis. Demonstrable lesions in the lung accompanied by cough, fever, loss of weight and asthenia rarely heal. Few children under six with positive sputum survive. Disease of the bronchial nodes with only a few, small, discrete

pulmonary foci or involvement of the pleura without recognizable involvement of the lung give relatively good prognoses under favorable conditions. Children over three who have a positive tuberculin reaction but no clinical signs of disease show a large percentage of arrests if protected against reinfection and properly supervised. Even tuberculin positive infants have a fair chance under similar conditions. It has been shown that young animals are not more susceptible to measured infection than older ones but that the disease is more serious because of the massive doses received by the infant cared for by tuberculous individuals. Children from tuberculous parents respond to treatment better than those of non-tuberculous stock and seem to inherit resistance rather than disease from their parents. The child, especially the infant, must be separated from any active focus in the home to prevent massive or repeated infection as the child associated with an open case rarely escapes infection and the stimulus to resistance provided by a primary non-lethal infection does not always protect even during childhood. Repetition of infection together with the size and the virulence of the initial dose are important factors in prognosis. While the state of nutrition has no influence on the implantation of the tubercle bacillus, under-nutrition seems to favor its development. This was shown markedly during the war in Germany and Austria when a period of semi-famine was followed at once by a great increase in the tuberculosis death rate. It has also been observed that a child eating generous amounts of mixed fat rarely develops clinical tuberculosis. While it is possible that benefit may be received from specific biologic factors which increase resistance—the work of Calmette with both animals and infants being the most hopeful—prevention of infection and of clinical disease remain our most important weapons. Discovery and removal of all sources of infection followed by the best of living conditions and periodic examinations will do much to save infected children. Treatment consists of rest, proper food and fresh air. Rest should be absolute during the febrile stage, quiet games and occupations followed by graded exercise are useful after the fever subsides. Ultra-violet radiations and sun light are useful in carefully selected cases. Rest, food and fresh air are always the most important measures.

EYE, EAR, NOSE and THROAT

Edited by Jas. C. Braswell, M. D.
726 Mayo Bldg., Tulsa

Observations on the Complications Following 4,000 Cases of Cataract Extraction., Cruickshank, M. M.: *Brit. J. Ophth.*, 1927, XI 275.

This article deals with 4,027 operations performed under the direction of Holland at Shikarpur, India, in the period from 1923 to 1926. Ninety and three-tenths per cent were performed by the Smith method, 5.3 per cent by the Barraquer technique, and 4.3 per cent with capsulotomy.

Complications such as vitreous loss following or preceding the lens, burst capsules, and spoon deliveries occurred during operation in 18.75 per cent.

Vitreous loss occurred in 10 per cent. It usu-

ally followed the lens, but the amount was high in only a few cases, as is evident from the fact that vision failed to improve in only 0.34 per cent of the cases. Such a loss followed a complete iridectomy in 13.08 per cent of the cases, and occurred in only 6 per cent of those in which a marginal, peripheral or no iridectomy was done.

Burst capsules strangely occurred more often when a complete iridectomy had been performed.

The complications occurring in 19.75 per cent of the cases after operation consisted in prolapse of the iris, iritis, keratitis, everted corneal flaps, postoperative glaucoma, sepsis and choroidal haemorrhage.

Prolapse of the iris occurred in 7.04 per cent of the cases. In the Barraquer method, an iridectomy is preferable to a complete iridectomy.

Non-improvement in vision attributable to the operation occurred in 5.11 per cent. It was due to sepsis, choroidal haemorrhage, plastic iritis, burst capsule, vitreous loss, keratitis, everted corneal flap, or postoperative glaucoma. Non-improvement not due to operation resulted in 2.38 per cent of the cases from corneal opacities, choroidoretinal changes, vitreous opacities, optic atrophy, low tension eyes, retinitis pigmentosa, or strabismus.

Deafness in School Children.: Differential Diagnosis with the Aid of Audiometers; Examination of 1,000 Pupils., Fowler, E. P.: Arch. Otolaryngol., 1927, VI, 43.

The data obtained from examination of the hearing of 1,000 pupils in excellent health is recorded. Group testing by means of the phonograph-audiometer was done. It was found that, in groups of forty, as many as 150 pupils could be tested in an hour. This examination was supplemented by an examination of the ear, nose, and throat, the determination of bone conduction, and the use of the noise apparatus or Galton whistle. A standard questionnaire was also employed. Children showing a loss of nine or more sensation units were considered defective.

The audiograms were classified according to types and grades, and a differential diagnosis was worked out on the basis of the history, the findings made by inspection, and the audiogram.

The article is supplemented by numerous tables and graphs.

A Rhinological Study of Bronchial Asthma., Bishop, V. L.: Ann. Otol., Rhinol. and Laryngol., 1927, XXXVI, 410.

On the basis of an extensive survey of the literature and wide clinical experience and study, the author has prepared an etiological classification of the asthmas. He divides them into two main groups with modified subdivisions. Extensive asthmas show a definite relationship to foreign proteins while the intrinsic asthmas do not. The author concludes from his study that the rhinologist obtains his best results in intrinsic asthma.

Under the term "intrinsic asthma" are grouped the bacterial and reflex types. The nose and throat have a definite etiological relation to bacterial asthma. In cases of reflex bronchial spasm the site of stimulation may be in the nose as in hyperplastic ethmoiditis. To explain a certain type of reflex asthma the author reviews the his-

tology, physiology, and nerve mechanism of the nasal mucosa.

Bishop's cases are carefully analyzed. In intrinsic asthma the surgical removal of foci of infection and the correction of nasal defects gave the best results. Persistent cases in which all foci have been removed have often been treated successfully by shrinkage and local medication. Vaccine treatment has given indifferent results.

AMPULE MEDICATION

Sterile solutions in ampules for subcutaneous, intramuscular or intravenous use are rapidly assuming one of the foremost places among pharmaceutical products. They are being utilized to a greater extent and by an increasing number of physicians as the list of drugs being made available in this form is augmented.

The value of hypodermic and intravenous medication has been realized more and more since the advent of the arsphenamines and a better understanding of the requirements and possibilities of this method of medication.

Numerous drugs admit of no other efficient and safe method of administration, since when given orally they are so adversely affected, even destroyed, by the digestive juices as to render them therapeutically inactive. Among such drugs are opinephrin, insulin and pituitary solution.

Other drugs cannot be satisfactorily given orally because they produce nausea or local gastrointestinal irritation and, owing to the slow or irregular absorption of some substances, the results produced are so variable as to render them of doubtful value or even unsafe.

The advantages of this method of medication are numerous. It admits of more careful and thorough control of the patient due to greater certainty as to dosage, etc. Prompt and efficient action resulting from rapid and complete absorption also obtain; this being of especial advantage in emergencies.

A new booklet on the subject of ampule medication has recently appeared from the Abbott Laboratories. In this booklet there are interesting chapters on Isotonicity, Hydrogen ion concentration Buffers, the administration of intravenous injections and a description of solutions in general use. A copy of this booklet may be obtained without cost, on application to the Abbott Laboratories, North Chicago, Ill.

SOMETIMES OVERLOOKED

Too many physicians, we fear, neglect to specify the manufacturer when prescribing such rather common but exceedingly useful products as, for example, Cod Liver Oil. Yet differences in quality are just as marked in these preparations as in biologicals or any of the more intricate synthetic chemicals.

Taking Cod Liver Oil as a case in point there are of course, a number of good brands on the market; but one of them contains not less than 13,500 vitamin "A" units and not less than 2000 vitamin "D" units in each fluid ounce. The preparation referred to is Parke, Davis & Co's Standardized Cod Liver Oil. And surely, there must be some connection between the high vitamin content of this product and the fact that Parke, Davis & Co. have been carrying on research work in nutritional chemistry for years!

Yes, specification surely pays, all down the line.

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